(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
22 March 2001 (22.03.2001)

PCT

(10) International Publication Number
WO 01/20478 A2

(51) International Patent Classification[7]: G06F 17/00

(21) International Application Number: PCT/US00/21535

(22) International Filing Date: 7 August 2000 (07.08.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/153,609 13 September 1999 (13.09.1999) US
09/532,766 22 March 2000 (22.03.2000) US

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(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,

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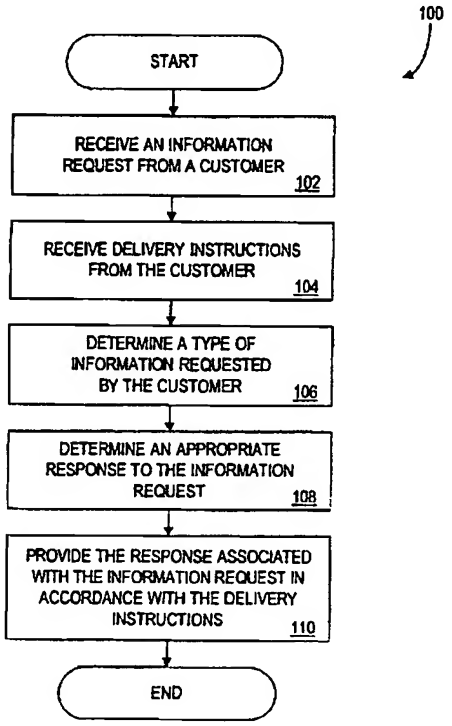
(54) Title: METHOD AND APPARATUS FOR RECEIVING AND RESPONDING TO CUSTOMER REQUESTS FOR INFORMATION



(57) Abstract: A method allows a customer or other user to express interest in a product or service and allows a provider of the product or service to capture the interest and respond to the interest expressed by the customer. In one implementation of the method, an information request and delivery instructions are received from a customer. The type of information requested by the customer and the appropriate response to the customer's information request can be determined and used to create a response to the information request received from the customer. The response to the information request received from the customer is provided in accordance with the delivery instructions received from the customer. An apparatus implementing the method may include a user device through which a customer can provide an information response and delivery instructions, a controller for processing the information request and delivery instructions provided by the customer; and a product terminal in communication with the controller and the user device. The product terminal may receive information requests and delivery instructions from a user device and forward the information request to the controller. In addition, the product terminal may receive a response to the information request from the controller and provide the response to a contact or other communication device specified in the delivery instructions.

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HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) **Designated States** *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— *Without international search report and to be republished upon receipt of that report.*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

METHOD AND APPARATUS FOR RECEIVING AND RESPONDING TO CUSTOMER REQUESTS FOR INFORMATION

CROSS-REFERENCE TO RELATED APPLICATIONS

This application hereby claims priority from U.S. Provisional Application Serial No. 60/153,609 filed September 13, 1999, titled "Browsing for Value" the entirety of which is incorporated herein by reference for all purposes.

BACKGROUND OF THE INVENTION

Field of the Invention:

The present invention is directed to a method and apparatus for allowing customers to express interest in a product or service and for allowing providers of products and services to respond to the interest expressed by the customer.

Background:

Retailers, manufacturers, and other providers of products and services are interested in accurately gauging or determining customer or user interest in their products and services. Unfortunately, data on completed sales of products or services often does not accurately reflect or measure the true level of customer interest in a product or service. If a customer is in a hurry, the customer may not have time to buy a product or even indicate or register the customer's interest in the product. For example, a potential customer browsing or shopping in a department or retail store may be very interested in learning about a product, such as a lamp, offered for sale in the store. While the potential customer may not have enough time or opportunity to obtain or peruse sufficient information about the product in the department store necessary for the potential customer to make a decision to buy the product, the potential customer may be very interested in the product. If the potential customer leaves the department store without buying the product, the department store may never learn of the potential customer's interest in the product or of the lost opportunity to sell the product to the potential customer.

As another example, another potential customer browsing or shopping in a retail store may be very interested in a particular product, such as a dress, that is on display in the store. However, the customer may be in a hurry and not have time to try on the dress, to determine the availability of the dress in her desired color or size, to check the price of the dress, etc. Once again, if the customer leaves the department store without

making a purchase, the store has lost an opportunity to obtain information regarding the customer's level of interest in the dress, the customer's type of interest in the dress (*e.g.*, fabric, cost, color, etc.), or to otherwise provide information to the customer sufficient to motivate the customer to purchase the dress.

As a third example, a potential customer browsing or shopping in a department store may be very interested in a particular product, such as a lawnmower, but is unwilling or unable to purchase the product at the current or full price. However, if the product were offered at a discounted price or if the product goes on sale, and the customer is properly notified of the reduced price for the product, the customer may be willing and able to purchase the product. If the potential customer leaves the department store without purchasing the product, the department store may never learn of the potential customer's interest in the product or the conditions under which the potential customer would have purchased the product.

Some product sellers have attempted to increase their product sales by obtaining contact information from customers by the use of frequent shopper cards and promotional offers wherein customers provide contact information such as names, phone numbers, e-mail addresses, etc. Advertising materials can then be sent to the customers with salespeople or telemarketers providing follow up telephone calls to the customers. Some World Wide Web sites ask or require visitors to fill out contact information in order to receive promotional offers and notifications of new products, sales, features, etc. However, such subsequent promotional materials and product notifications are not directed to specific needs or requests from the customers.

Therefore, despite the state of the art, there exists a need for a method and system that allows a customer to easily and quickly express an interest in a product or service and that enables a retailer, manufacturer, or other provider of products and services to capture the customer's interest and receive queries or information requests from the customer regarding a product or service that the customer is interested in. Preferably such a method and apparatus will allow a customer to specify or select the type of information the customer is interested in and how or when the information should be delivered to the customer or to other people or communication device designated by the customer.

SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide a method and apparatus for allowing customers to express interest in a product or service and for allowing providers of products and services to respond to the interest expressed by the customer.

A further object of the present invention is to provide a method and apparatus for allowing a product or service provider to receive requests for information regarding products or services from customers and for allowing the product or service provider to send the requested information to the customer, or to at least one other person designated by the customer, over one or more delivery channels selected by the customer.

To achieve the foregoing and other objects and in accordance with the purposes of the present invention, as embodied and broadly described herein, a method for operating an information system includes receiving an information request from a customer, receiving delivery instructions from said customer, and providing at least one response to said information request in accordance with said delivery instructions.

To additionally achieve the foregoing and other objects and in accordance with the purposes of the present invention, as embodied and broadly described herein, an apparatus includes a controller, a product terminal associated with at least one product and in communication with the controller, the product terminal adapted to receive an information request and to forward the information request to the controller, and wherein the controller is adapted to receive the information request from the product terminal and to provide a response to the information request.

Also to achieve the foregoing and other objects and in accordance with the purposes of the present invention, as embodied and broadly described herein, an apparatus includes a controller; a first product terminal associated with at least one of a product or service and in communication with the controller, the first product terminal adapted to receive an information request and delivery instructions and to provide the information request and the delivery instructions to the controller; wherein the controller is adapted to receive the information request and the delivery instructions from the first product terminal and to provide a response to the information request in accordance with the delivery instructions.

Also to achieve the foregoing and other objects and in accordance with the purposes of the present invention, as embodied and broadly described herein, a method for operating an information system includes receiving an information request from a customer, wherein the information request is associated with at least one of a product or service; receiving delivery instructions from the customer, wherein the delivery instructions are associated with the information request and include at least one contact identifier; determining at least one type of information requested by the customer; and providing at least one response to the information request in accordance with the delivery instructions.

BRIEF DESCRIPTION OF THE DRAWINGS

In the Drawings:

Figure 1 is a flowchart of a first embodiment of a method in accordance with the principles of the present invention;

Figure 2 is a block diagram of system components for an embodiment of an apparatus usable with the method of Figure 1;

Figure 3 is a block diagram illustrating a representative user device of Figure 2;

Figure 4 is a block diagram illustrating a representative product terminal of Figure 2;

Figure 5 is a block diagram illustrating a representative controller of Figure 2;

Figures 6A and 6B are a tabular representation of a possible data structure for the product database of the controller of Figure 5;

Figure 7 is a tabular representation of a possible data structure for the product terminal database of the controller of Figure 5;

Figure 8 is a tabular representation of a possible data structure for the request database of the controller of Figure 5;

Figure 9 is a tabular representation of a possible data structure for the customer database of the controller of Figure 5;

Figure 10 is a tabular representation of a possible data structure for the payment database of the controller of Figure 5;

Figure 11 is a tabular representation of a possible data structure for the information provider database of the controller of Figure 5;

Figure 12 is a tabular representation of a possible data structure for the response database of the controller of Figure 5;

Figure 13 is a tabular representation of a possible data structure for the transaction database of the controller of Figure 5;

Figure 14 is a block diagram of system components for a second embodiment of an apparatus usable with the method of Figure 1;

Figure 15 is a block diagram of system components for a third embodiment of an apparatus usable with the method of Figure 1;

Figure 16 is a tabular representation of potential uses of the product terminal identifier database of Figure 7, the product database of Figures 6A and 6B, and the request database of Figure 8;

Figure 17 is a block diagram of possible actions that can be taken as part of the send response step of the method of Figure 1;

Figure 18 is a block diagram of a second embodiment of a method in accordance with the principles of the present invention;

Figure 19 is a block diagram of a third embodiment of a method in accordance with the principles of the present invention;

Figure 20 is a tabular representation of a possible data structure for a buddy list database usable with the method of Figure 1; and

Figure 21 is a block diagram of a method that can be used with the method of Figure 1 to query an information provider.

DETAILED DESCRIPTION OF THE EMBODIMENTS

A first embodiment 100 of a method in accordance with the principles of the present invention is illustrated in Figure 1. The method 100 allows a customer or other user to express interest in a product or service and allows a provider of the product or service to capture and respond to the interest expressed by the customer. The method 100 illustrated in Figure 1 includes a step 102 during which an information request is received from a customer regarding one or more products or services that the customer is interested in or wants to obtain more information about, a step 104 during which delivery instructions or delivery preferences are received from the customer regarding how, where, and/or under what circumstances a response or reply to the customer's

information request should be sent to the customer, a step 106 during which the type of information requested by the customer is determined if a predetermined or preset response to the customer's information request is not used, a step 108 during which an appropriate response to the customer's information request is determined if a predetermined or preset response to the customer's information request is not used, and a step 110 during which a response or reply to, or otherwise associated with, the information request received from the customer during the step 102 is provided in accordance with the delivery instructions received from the customer during the step 104. Each of these steps of the method 100 will be discussed in more detail below.

A significant advantage provided by the method 100 of the present invention is that a customer can easily and quickly express interest in a product or service without actually buying the product or service. In addition, a provider of products or services can capture and record such customer interest and respond to the customer's information request in the manner or via the delivery channels specifically requested or designated by the customer in the delivery instructions. Delivery instructions may include a contact identifier, such as a mailing address, e-mail address, telephone number, facsimile number, pager or beeper number, etc., and a rule or time condition governing when, how, or under what circumstances a response to a customer's information request should be sent, as will be discussed in more detail below.

In general, the method 100 can be implemented or initiated in at least three ways: (1) a local or in-store implementation, wherein a customer, who is browsing or passing through or by a store, provides an information request via a user device located within, near, or otherwise local to the store, or with, held by, or otherwise associated with the customer, regarding one or more products or services sold or otherwise provided by the store or associated with the store; (2) a remote implementation, wherein a customer provides an information request via a user device located remotely from a store or computer system associated with the store, such as via a computer or telephone or data communications network; or (3) a hybrid implementation, wherein a customer may create or store one or more information requests while walking through or by one or more stores and then transmits or otherwise provides the information requests at a later time while the customer is remote from the store. Each of these implementations will be discussed in more detail below.

Regardless of how a customer provides a information request, the information request indicates that the customer wishes to obtain further information regarding or associated with a product or service of interest to the customer. The customer may make such an information request for many reasons. For example, in a local implementation of the method 100 when the customer is in a store but is in a hurry and does not have enough time to purchase a product or service or to determine other information of interest to the customer regarding the product or service, the customer may provide an information request while the customer is in the store. In a remote implementation of the method 100, the customer may provide an information request regarding a product or service that the customer is interested in learning more about, e.g., perhaps a product that the customer saw while previously browsing in a store, in a catalog, or on the store's World Wide Web site. The customer may provide the information request via telephone or computer located in the customer's home and remote from the location of the supplier of the product. The information request provided by the customer is received during the step 102, as will be discussed in more detail below. In a hybrid implementation of the method 100, a customer may create one or more information requests using a personal digital assistant, also known as a PDA or palm top computer, while the customer is walking through one or more stores, browsing in a mall or shopping center, etc. The customer may then store the information requests on the personal digital assistant and transmit them one or more (*i.e.*, in batch mode) at a time at a later time from a location remote from the stores, mall, shopping center, etc. The customer may also download or otherwise transfer the information requests from the personal digital assistant to another device, such as computer, before sending the information requests to a product terminal or controller. The information requests will be received during one or more implementations of the step 102.

A significant feature of the method 100 of the present invention is that a customer requesting information can be given a great deal of flexibility in the type of information requested. Thus, the information request created by a customer and received during the step 102 is not necessarily limited to any specific type of information. For example, the customer may request information as to when a particular product is on sale, when a product in a certain size is available, what colors

are available for a product, what alternatives are available for a product or service, what accessories or options are available with a product, etc. The customer may request more than one type of information in an information request received during the step 102 and the method 100 is not limited to any specific type or amount of information that may be requested by a customer. The type of information requested by the customer is preferably determined during the step 106. This feature will be discussed in more detail below. In addition to the above, one response to an information request can result in other responses being sent in accordance with delivery instructions received from a customer. For example, a customer requesting information about a specific product might receive responses regarding not only the product of interest, but the whole product line or other related products.

Another significant feature of the method 100 of the present invention is that a customer making an information request can, if desired, specify how, when, or under what circumstances a response to the information request is to be provided to the customer and/or to at least one other person or communication or contact device designated by the customer. More specifically, in addition to providing an information request regarding one or more products or services of interest to the customer, the customer may also provide delivery instructions as to how, where, and/or under what conditions the requested information should be sent to the customer or to at least one other person or communication or contact device designated by the customer in the delivery instructions. The customer may provide the delivery instructions locally while the customer is in a store, or remotely when the customer is not in a store. For example, while walking through an electronics store a customer may use a personal digital assistant or cellular telephone to provide an information request in which the customer request that manufacturer or warranty information for a certain television set sold in the electronics store be e-mailed to a computer accessible e-mail address provided by the customer in the delivery instructions. In this example, the customer does not have to wait in the store for the information, thereby allowing the customer to obtain the information even though the customer may be in a hurry and unable to wait for the information while in the store. In addition, the customer is receiving the response to an information request via a device (*i.e.*, a computer) different from the device (*i.e.*, a personal digital assistant or cellular telephone) the customer used to

provide the information request and delivery instructions. In other embodiments, a customer may use one type of device, such as a personal digital assistant, to provide an information request and another type of device, such as a cellular telephone, to provide delivery instructions. For example, a customer may use a personal digital assistant to provide an information request while the customer is walking through a store. Later, perhaps when the customer is at home, the customer may use a cellular telephone to provide specific delivery instructions for a response to the customer's information request. The customer may specify in the delivery instructions that the response be e-mailed as soon as possible to a computer accessible address provided by the customer in the delivery instructions. In this example, the device by which the customer receives the response if different from both the device used by the customer to provide the information request and the device used by the customer to provide the delivery instructions.

As another example, while in a jewelry store a customer may request to receive a telephone call when a particular piece of jewelry goes on sale. The customer provides the telephone number in the delivery instructions. As a third example, a customer may request that he or she receive a message via facsimile, at a telephone number provided by the customer in the delivery instructions, whenever a designated car repair shop is providing a discount on oil changes. The customer may provide such an information request and delivery instructions remotely via a computer network or cellular telephone network. In a fourth example, the customer may specify in delivery instructions that a response to the customer's information request be faxed as soon as possible to a telephone number provided by the customer in the delivery instructions, that a response be sent via letter, Federal Express^{SM}, or other traditional mail system to an address specified in the delivery instructions, that the customer be called at a telephone number provided by the customer in the delivery instructions, and/or that the customer be paged at a pager or beeper number provided by the customer in the delivery instructions. The customer may also designate other types of communication or contact devices in the delivery instructions. The delivery instructions provided by the customer are received during the step 104, as will be discussed in more detail below.

Providing a response or a reply to the customer and/or one or more contact devices or more people other than the customer during the step 110 may be performed

in multiple parts. That is, the customer's information request may generate more than one response or a single multi-part response. A multi-part response might occur, for example, when the information requested by a customer becomes available only over time or in pieces, changes, or becomes somehow related to other customer information requests.

The method 100 is not limited to specific channels or means of delivery of the response to a customer's information request. Thus, the customer's delivery instructions may specify that a response to the customer's information request be provided to the customer in one or more ways, such as by facsimile machine, telephone call, e-mail message, letter, wireless or other transmission to a personal digital assistant, etc. This feature will be discussed in more detail below. In addition, the customer can specify in the delivery instructions that the response sent during the step 110 be sent to at least one person different from the customer in addition to or in lieu of sending the response to the customer. The method 100 allows a response to be sent to a device other than the device from which the information request was received and the method 100 allows a response to be sent to at least one person other than the customer from whom the information request was received. The response may also be sent to the customer via the same device that the customer used to provide the information request and/or the delivery instructions.

Another significant feature of the method 100 of the present invention is that the steps 102 and 104 may occur at the same time, at different times, and/or in reverse order to that presented in Figure 1 in both the local implementation and the remote implementation of the method 100. For example, a customer may use a personal digital assistant to make an information request, received during the step 102, regarding the availability of a particular shirt in a certain colors. The customer may have a standing delivery instruction made during a previous practice or implementation of the step 104 such that all responses to all information requests made by the customer are to be in the form of an e-mail message sent to a computer accessible e-mail address designated by the customer during such previous practice or implementation of the step 104. Therefore, the step 104 has occurred before the step 102 and the step 104 may have occurred a significant amount of time before the customer made the specific information request regarding the availability of a particular shirt in certain colors. In

addition, the customer will receive the response to the customer's information request via a different device (*i.e.*, a computer) than the device (*i.e.*, the personal digital assistant) with which the customer provided the information request. This feature will be discussed in more detail below.

FIRST SYSTEM EMBODIMENT

Referring now to Figure 2, one embodiment 120 of an apparatus or system usable with the method 100 will now be described. The apparatus 120 can be used in both a local implementation of the method 100 and remote implementation of the method 100, as will be discussed in more detail below.

The apparatus 120 preferably includes one or more user, client, or other communication devices, such as the user devices 122, 124, 126, 128, 130, 132, at or with which customers can provide or make information requests and delivery instructions. Some or all of the user devices 122, 124, 126, 128, 130, 132 may be identical or different with regard to configuration, design, or operation. A user device, such as a portable computer or personal digital assistant, may be carried by a customer as the customer moves through or by a store, mall, shopping center, trade show, or other shopping area in a local implementation of the method 100. Alternatively, a user device, such as a personal computer, may be located at the customer's home to allow the customer to remotely provide the information request and delivery instructions in a remote implementation of the method 100. A user device may include an input device, such as a keyboard, touch screen, microphone, voice recognition unit, bar code reader, magnetic card reader, etc., to allow a customer to provide the information request. The user device may also include an output device, such as a printer, audio speaker, display screen, etc., to allow information and instructions to be provided to a customer. Thus, a user device can comprise or include many types of devices, such as a personal digital assistant, desktop or portable personal computer, dumb terminal, two way pager, radio, mobile or cellular telephone, customer wearable device that includes a transmitter, etc. The user device may be supplied by a customer or temporarily or permanently issued or provided to the customer by a store or other third party. In an example implementation of the system 120, the user devices 122, 124 may be personal digital assistants carried by customers, the user device 126 may be a cellular telephone carried by a customer

and the user device 128 may be a dumb terminal located in a store, all of which are local to the store in which the customer is walking or browsing through. The user devices 130, 132 may be computers or dumb terminals located at customers' homes, *i.e.*, remote from the store. User devices will be discussed in more detail below.

The apparatus 120 also includes one or more product terminals, such as the product terminals 134, 136, 138, that are in communication with the user devices 122, 124, 126, 128, 130, 132 either directly, such as by a computer network or telephone line, or indirectly, such as by a cellular telephone, radio, or other wireless connection or network. Some or all of the product terminals 134, 136, 138 may be identical or different with regard to configuration, design, or operation. The product terminals 134, 136, 138 are also preferably in communication with a controller 140, either directly, such as by a computer network or telephone line, or indirectly, such as by a cellular telephone, radio, or other wireless connection or network. The controller 140 will be discussed in more detail below.

Information requests and delivery instructions created or provided by a customer via a user device are received from the user device by a product terminal. For example, the user devices 122, 130 may communicate with the product terminal 134 while the user devices 124, 126 communicate with the product terminal 136. User devices may also communicate with one or more product terminals. For example, as illustrated in Figure 2, the user device 124 is in communication with, or at least capable of communication with, the product terminals 134, 136, 138 and the controller 140. Similarly, the user device 126 is in communication with, or at least cable of communication with, the product terminals 136, 138. If desired, each of the user devices 122, 124, 136, 128, 130, 132 can be in communication with, or at least capable of communication with, each of the product terminals 134, 136, 136 and the method 100 is not limited to any particular connection scheme of user devices to product terminals, user devices to the controller 140, or product terminals to the controller 140. Therefore, in general, a user device may be able to communicate with one or more of a plurality of product terminals.

As will be discussed in more detail below, a product terminal may be associated with a single product or service, one or more individual items of a product, a collection

or group of products or services, etc. As a result, information requests and delivery instructions can be associated with one or more specific products or services.

Like user devices, a product terminal may have an input device, such as a keyboard, touch screen, microphone, voice recognition unit, bar code reader, magnetic card reader, infrared receiver or detector, etc., antenna, to allow a customer to provide an information request and delivery instructions. Furthermore, a product terminal may include an output device, such as a printer, audio speaker, display screen, infrared transmitter, antenna, etc., to allow responses, information and instructions to be provided to a customer. Product terminals will be discussed in more detail below.

As previously discussed above, the apparatus 120 preferably also includes at least one controller 140 that is in communication with the product terminals 134, 136, 138 either directly, such as by a computer network or telephone line, or indirectly, such as by a cellular telephone, radio, or other wireless connection or network. Information requests and delivery instructions created by a customer with a user device are received from the user device by a product terminal and passed on or forwarded to the controller. Alternatively, user devices may be connected directly to, or communicate directly with, the controller 140. For example, the user device 132 may communicate with the controller 140 directly or indirectly via the product terminal 138. Similarly, the user device 124 may communicate with the controller 140 directly or indirectly via the product terminal 134 or the product terminal 136.

The controller 140 may be associated with a single store, a chain of stores (*e.g.*, five hardware stores), a collection of stores (*e.g.*, a mall or shopping center), or just a portion of one or more stores (*e.g.*, a men's department of a large clothing store). The controller 140 may also be associated with one or more providers of products and services found in a single store, in multiple stores, at a trade show, or other special event. The controller 140 may also be located at a manufacturer's location and in communication with one or more product terminals located at one or more stores, malls, retail establishments, etc. In fact, the system 120 could be a manufacturer based network or a retailer based network, or a hybrid of the two, depending on the implementation of the system 120.

The apparatus 120 may also include one or more contact or communication devices, such as contact devices 142, 144, 146, that can be used by a customer or others

to receive responses provided by the controller 140 during the step 110 to information requests received by the controller 140 during the step 102. Possible contact devices include a personal computer, a network terminal or server, a telephone, a beeper, a personal digital assistant, a facsimile machine, etc. During the step 110, the controller 140 can send an appropriate response to the customer's information request to one or more of the contact devices 142, 144, 146 designated by the customer in the delivery instructions. One or more of the user devices 122, 124, 126, 128, 130 may also be or function as a contact device and one or more of the contact devices 142, 144, 146 may also be or function as a user device. With the system 120, a customer may provide an information request via one type of device and receive the response via the same or a different type of device.

During use of the system 120 in a local implementation of the method 100, a customer provides an information request via a user device, such as a personal digital assistant, while the customer is walking through or by a store. The user device transmits the information request to the controller 140, either directly or via one or more product terminals. The controller 140 receives the information request during the step 102. For example, one, some, or all products in a store may have a unique product code, product tag, product identifier, etc. associated with them. The code, tag, or identifier may be printed on a label, tag, etc. attached to the product or the product's packaging, promotional material, instructions, etc. A customer carrying a personal digital assistant as a user device may enter information from the code, tag or identifier into the user device as a part of the information request prior to providing or transmitting the information request to a product terminal or to the controller 140. If the personal digital assistant has a bar code reader or other scanner, the customer may also scan the code, tag or identifier to input the information into the personal digital assistant to use as part of the customer's information request. The customer may also use the personal digital assistant to generate and transmit delivery instructions that are received by the controller 140 during the step 104. The personal digital assistant may transmit the information request and the delivery instructions via an infrared transmitter on the personal digital assistant. The infrared transmission from the personal digital assistant may, in turn, be detected or received by an infrared receiver or detector included as part of a product terminal or the controller 140.

As an alternative example of a local implementation of the system 120, a customer using a cellular or other mobile telephone as a user device while in a retail store may push buttons or keys on the cellular telephone to create DTMF (dual tone multi-frequency) signals that are received by the controller 140 via a public or private telephone network and used to ascertain the product of interest and/or the customer's information request and delivery instructions. As another alternative, the customer may provide voice input or commands into the cellular telephone which can be processed by a voice recognition system or interactive voice recognition unit in or accessed by the controller 140. In these examples, the user device is located or used locally to, or in the same store as, the product terminal and the controller 140. In a remote implementation of the system 120 with the method 100, a customer may use a personal computer or push-button telephone located at the customer's home as a user device to provide an information request and associated delivery instructions to a product terminal or directly to the controller 140. In this example, the user device is located remotely from the product terminal and the controller 140.

Now referring to Figure 3, a representative block diagram of a user device, such as the user device 132, is illustrated. The user device 132 may include a processor, microchip, or computer 150 that is in communication with or otherwise uses or includes one or more communication ports 152 for communicating with the product terminal 138 and/or with the controller 140 and/or other devices. For example, the user device 132 may have an infrared or other transmitter as one communication port to allow the user device 132 to communicate with the product terminal 138. In addition, if the user device 132 is connected to the controller 140 via an Ethernet local area network, the user device 132 will include an Ethernet adapter as a communication port to allow the user device 132 to communicate with the controller 140.

The user device 132 may include one or more output devices 154 for conveying information, such as a printer, audio speaker, infrared or other transmitter, antenna, display screen or monitor, text to speech converter, etc. to provide information, responses, and instructions to the customer, as well as one or more input devices 156 for receiving information, such as a bar code reader or other optical scanner, infrared or other receiver, antenna, magnetic stripe reader, image scanner, roller ball, touch pad, joystick, touch screen, microphone, computer keyboard, computer mouse, etc. to enable

a customer to provide or enter information requests, delivery instructions, and other information to the user device 132 and the system 120. A user device 132 may include a voice recognition system or interactive voice response unit as an input device 156 to aid in receiving and processing information requests and delivery instructions. The user device 132 may also include a fingerprint scanner or reader, a retinal scanner, a voice analyzer, or other biometric data input device as an input device 156 to allow the user device 132 to identify a customer and/or generate a customer identifier that can be sent as part of or along with the information request.

In addition to the above, the user device 132 may include a memory or data storage device 158 to store information, software, databases, device drivers, customer information, customer identifications, information requests, responses, delivery instructions, etc. The memory or data storage device 158 preferably comprises an appropriate combination of magnetic, optical and/or semiconductor memory, and may include, for example, Random Access Memory (RAM), Read-Only Memory (ROM), a tape drive, flash memory, a floppy disk drive, a ZIP™ disk drive, a compact disc and/or a hard disk.

The user device 132 may also include an internal clock element 160 to maintain an accurate time and date for the user device, create time stamps for information requests generated via the user device 132, create time stamps for delivery instructions generated via the user device 132, create time stamps for responses received at the user device 132, etc. Such a clock element 160 may be used to create time stamps when, for example, multiple information requests are created with and stored on the user device132 by a customer and then provided by the customer in batch at a later time to a product terminal or the controller 140. If the customer desires that the information requests be processed in chronological order, the time stamps provide a way of ordering the information requests.

As previously discussed above, possible user devices include a personal computer, network terminal or server, telephone, beeper, dumb terminal, personal digital assistant, facsimile machine, etc. User devices may be located either locally or remotely with regard to the product terminals 134, 136, 138 and the controller 140 and the system 120 may include both locally and remotely located user devices simultaneously. Also as previously discussed above, a user device may be or function

as a contact device, and *vice versa*. Therefore, contact devices, such as the contact devices 142, 144, 146, may have the same structure, components and operation as the user device 132 illustrated in Figure 3. In both instances, the user devices and contact devices are functioning broadly as communication devices that allow a customer to provide information requests and delivery instructions and/or receive responses.

Now referring to Figure 4, a representative block diagram of a product terminal, such as the product terminal 138, is illustrated. The product terminal 138 may include a processor, microchip, or computer 170 that is in communication with or otherwise uses or includes one or more communication ports 172 for communicating with the controller 140, the user device 132, and/or other devices. For example, if the user device 124 is a personal digital assistant and the user device 126 is a cellular telephone, the product terminal 138 may have an infrared or other transmitter as one communication port to allow the product terminal 138 to communicate with the user device 124 and a connection to a cellular telephone network as another communication port to allow the product terminal 138 to communicate with the user device 126. In addition, if the user device 128 is a dumb terminal and the user device 132 is a computer, the product terminal 138 may have appropriate communication ports to allow the product terminal 138 to communicate with the user devices 128, 132. Furthermore, if the product terminal 138 is connected to the controller 140 via an Token Ring type local area network, the product terminal 138 will include an Token Ring adapter as a communication port to allow the product terminal 138 to communicate with the controller 140.

The product terminal 138 may also include an internal clock element 174 to maintain an accurate time and date for the product terminal 138, create time stamps for information requests generated via the product terminal 138 or received by the product terminal 138, create time stamps for delivery instructions generated via the product terminal 138 or received by the product terminal 138, create time stamps for responses received or generated by the product terminal 138, etc.

In addition, the product terminal 138 may include one or more output devices 176, such as a printer, audio speaker, display screen or monitor, text to speech converter, infrared or other transmitter, antenna, etc. to provide instructions, responses, and information to customers, as well as one or more input devices 178, such as a bar

code reader or other optical scanner, infrared or other receiver, antenna, magnetic stripe reader, image scanner, roller ball, touch pad, joystick, touch screen, microphone, computer keyboard, computer mouse, etc. to allow or enable a customer to provide information requests, delivery instructions, or other information to the product terminal 138 and the system 120. The product terminal 138 may include a voice recognition system or interactive voice response unit as an input device 178 to aid in receiving and processing information requests and delivery instructions. The product terminal 138 may also include a fingerprint scanner or reader, a retinal scanner, a voice analyzer, or other biometric data input device as an input device 178 to allow the product terminal 138 to identify a customer and/or generate a customer identifier that can be sent as part of or along with the information request.

In addition to the above, the product terminal 138 may include a memory or data storage device 180 to store information, software, databases, device drivers, product information, product identifiers, customer information, customer identifiers, product terminal identifiers, information request, delivery instructions, responses, etc. The memory or data storage device 180 preferably comprises an appropriate combination of magnetic, optical and/or semiconductor memory, and may include, for example, Random Access Memory (RAM), Read-Only Memory (ROM), a tape drive, flash memory, a floppy disk drive, a ZIP™ disk drive, a compact disc and/or a hard disk.

Each product terminal 134, 136, 138 may be associated with a single product, a single service, one or more individual items of a product, a collection or group of products or services, etc. For example, the product terminal 134 may be associated with sports equipment, the product terminal 136 with women's shoes, and the product terminal 138 with household appliances. As another example, a product terminal may be associated with one specific type of product, such as a tennis racket, toaster oven, automobile, chair, chainsaw, etc. A product terminal may be located close to a product or interest, *e.g.*, on top of a rack of clothes, and the product terminal may be associated with a plurality of products, *e.g.*, all of the clothes on a given rack of clothes. For example, each type of shirt on a rack of shirts may have a bar or item code associated with it. In order for the customer to designate a specific type of shirt as the shirt the customer is interested in as part of the customer's information request, the customer

may use a bar code reader on a product terminal to scan the specific shirt's bar code. Alternatively, a product terminal may include an alphanumeric touch screen or keyboard to allow a customer to enter product information into the product terminal.

If a product terminal is associated with a single product or service or a single item of a product or service, the information request and delivery instructions received at or by the product terminal can be easily and even automatically associated with the product. If a product terminal is associated with more than one product or service, the information request may need to include a product identifier or other sufficient information to identify the specific product or service of interest associated with the information request. Alternatively, the product terminal or controller may query the customer to obtain sufficient information to ascertain the product or service of interest.

Now referring to Figure 5, a representative block diagram of a controller, such as the controller 140, is illustrated. The controller 140 may include a processor, microchip, or computer 200 that is in communication with or otherwise uses or includes one or more communication ports 202 for communicating with product terminals, contact devices, and/or other devices. For example, if the controller 140 is connected to the product terminals 134 via an Ethernet local area network, the product terminal 136 via a cellular telephone network, and the product terminal 138 via a Token Ring type local area network, the controller 140 may have an Ethernet adapter as one communication port to allow the controller 140 to communicate with the product terminal 134, a connection to a cellular telephone network as another communication port to allow the controller 140 to communicate with the product terminal 136, and a Token Ring adapter to allow the controller 140 to communicate with the product terminal 138. In addition, if the contact device 146 is a personal digital assistant, the contact device 144 is a cellular telephone, and the contract device 142 is a facsimile machine, the controller 140 may have appropriate communication ports to allow the controller 140 to communicate with the contact devices 146, 144, 142.

The controller 140 may also include an internal clock element 203 to maintain an accurate time and date for the controller 140, create time stamps for information requests generated via the controller 140 or received by the controller 140, create time stamps for delivery instructions generated via the controller 140 or received by the

controller 140, create time stamps for responses received or generated by the controller 140, etc.

If desired, the controller 140 may include one or more output devices 204 such as a printer, infrared or other transmitter, antenna, audio speaker, display screen or monitor, text to speech converter, etc., as well as one or more input devices 205 such as a bar code reader or other optical scanner, infrared or other receiver, antenna, magnetic stripe reader, image scanner, roller ball, touch pad, joystick, touch screen, microphone, computer keyboard, computer mouse, etc. In addition, the controller 140 may include a voice recognition system or interactive voice response unit as an input device 205 to aid in or enable receiving and processing of information requests and delivery instructions. The controller 140 may also include a fingerprint scanner or reader, a retinal scanner, a voice analyzer, or other biometric data input device as an input device (not shown) to allow the controller 140 to identify a customer and/or generate a customer identifier that can be sent as part of or along with the information request. Including an input device in the controller 140 allows a customer to provide information requests and/or delivery instructions via the controller 140 (*i.e.*, allows the controller to function as a user device) while including an output device in the controller 140 allows a customer to receive a response from the controller 140 (*i.e.*, allows the controller 140 to function as a contact device). If desired, the controller 140 may also function as a product terminal.

In addition to the above, the controller 140 may include a memory or data storage device 206 to store information, software, databases, device drivers, product information, product identifiers, customer information, customer identifiers, contact identifiers, product terminal identifiers, configuration information, etc. The memory or data storage device 206 preferably comprises an appropriate combination of magnetic, optical and/or semiconductor memory, and may include, for example, Random Access Memory (RAM), Read-Only Memory (ROM), a tape drive, flash memory, a floppy disk drive, a ZIP™ disk drive, a compact disc and/or a hard disk. The processor 200 and the data storage device 206 in the controller 140 may each be, for example: (i) located entirely within a single computer or other computing device; or (ii) connected to each other by a remote communication medium, such as a serial port cable, telephone line or radio frequency transceiver. In one embodiment, the controller 140

may comprise one or more computers that are connected to a remote server computer for maintaining databases.

While specific implementations and hardware configurations for user devices, product terminals, controllers, and contact devices have been illustrated, it should be noted that other implementations and hardware configurations are possible and no that specific implementation or hardware configuration is needed. Therefore, many different types of implementations or hardware configurations can be used in the system 120 and with the method 100 and the methods disclosed herein are not limited to any specific hardware configuration for the system 120.

SOFTWARE AND DATABASES

Software may be resident and operating or operational on the controller 140. The software may be stored on the data storage device 206 and may include some or all of the following: a control program 208 for operating the central server 140; a product database 210 for storing information about products and services useful in responding to customer requests about information for such products and services; a product terminal database 212 for storing information about product terminals and any products or services associated with the product terminals; a request database 214 for storing information regarding information requests from customers received during implementations of the step 102 and/or delivery instruction information related to requests received during implementations of the step 104; a customer database 216 for storing information about customers; a payment database 218 for storing payment information for customers; an information provider database 220 for storing information about providers of information for products or services; a response database 222 for storing information relating to one or more responses that may be sent during one or more implementations of the step 110; and a transaction database 224 for storing information regarding to sales of products or services.

Each of the databases 210, 212, 214, 216, 218, 220, 222 and 224 and their use and potential data structure will be discussed in more detail below. As will be understood by those skilled in the art, the schematic illustrations and accompanying descriptions of the databases presented herein are exemplary arrangements for stored representations of information. A number of other arrangements may be employed

besides those suggested by the tables shown. Similarly, the illustrated entries of the databases represent exemplary information only. Thus, those skilled in the art will understand that the number and content of the entries can be different from those illustrated herein. Not all of the databases 210, 212, 214, 216, 218, 220, 222 and 224 will be used or needed in every embodiment of the method 100 or the system 120. Furthermore, some embodiments of the method 100 or the system 120 may use none or only some of the databases 210, 212, 214, 216, 218, 220, 222 and 224. Of course, there may be embodiments of the method 100 or the system 120 where all of the databases 210, 212, 214, 216, 218, 220, 222 and 224 are used.

The control program 208 may control the processor 200. The processor 200 performs instructions of the control program 208, and thereby operates in accordance with the present invention, and particularly in accordance with the methods described in detail herein. The control program 208 may be stored in a compressed, uncompiled and/or encrypted format. The control program 208 furthermore includes program elements that may be necessary, such as an operating system, a database management system and device drivers for allowing the processor 200 to interface with peripheral devices. Appropriate program elements are known to those skilled in the art, and need not be described in detail herein. According to an embodiment of the present invention, the instructions of the control program 208 may be read into a main memory from another computer-readable medium, such as from a ROM to RAM. Execution of sequences of the instructions in the control program 208 causes processor 200 to perform the process steps described herein. In alternative embodiments, hard-wired circuitry may be used in place of, or in combination with, software instructions for implementation of the processes of the present invention. Thus, embodiments of the present invention are not limited to any specific combination of hardware and software.

A tabular representation of a possible implementation of, or data structure for, the product database 210 is illustrated in Figures 6A and 6B and is directed to information regarding articles of clothing or to information which may be stored by a clothing retailer. A product database 210 may be used by the system 120 to store information relating to products and services and to determine appropriate responses to information requests in accordance with the method 100. Each product or service may have its own distinct product identifier. Alternatively, a group of products or services

may share all or part of a product identifier. When an information request is received during the step 102, a product identifier may be determined from the information request or associated with the information request. That is, since each information request will generally be related to one or more specific products or services, identifiers for such one or more products or services can be associated with the information request, as will be discussed in more detail below.

The product database 210 illustrated in Figures 6A and 6B includes a product identifier field 350 which may include identification information for specific products or services, a product name field 352 which may include name information for products or services listed in the product identifier field 350, a color field 354 which may include information regarding the colors of products listed in the product identifier field 350, a size field 356 which may include information regarding the sizes of products listed in the product identifier field 350, a description field 358 which may include information, such as color, size, fabric, etc. describing the products listed in the product identifier field 350, a manufacturer field 360 which may include information regarding the manufacturers or suppliers of products or services listed in the product identifier field 350, a suggested retail price field 362 for the products or services listed in the product identifier field 350, a current price field 364 for the products or services listed in the product identifier field 350, a cost field 366 for the products or services listed in the product identifier field 350 that indicates cost of goods sold, wholesale cost, etc., and a quantity in inventory field 368 for the products listed in the product identifier field 350.

While the product database 210 illustrated in Figures 6A and 6B provides information for five products 370, 372, 374, 376, 378, identified by the product identifiers "P-01065-92," "P-01065-93," "P-03066-79," "P-03066-80" and "P-03066-81," respectively, in the product identifier field 350, there is no theoretical limit to the number of products that can be stored in the product database 210 and different fields may be used in the product database 210. Furthermore, while the product database 210 illustrated in Figures 6A and 6B includes sample data that might be stored by a clothing retailer, other types of retailers may store information for other types of products or services having different characteristics.

A tabular representation of a possible implementation of, or data structure for, the product terminal database 212 is illustrated in Figure 7. The product terminal

database 212 may be used by the system 120 to determine what product or service a customer is requesting information about or to relate product terminals to specific products or services or information requests. For example, each product terminal may have a distinct product terminal identifier. In one embodiment a customer transmits an information request regarding a product via a product terminal associated with the product. The product terminal forwards the information request to the controller 140 along with its own product terminal identifier or otherwise adds its product terminal identifier to the information request. The controller 140 determines the product associated with the information request by first determining the product terminal identifier for the product terminal from which the information request was received and then accessing the product terminal database 212 to determine the product identifier associated with the product terminal. The controller 140 can then access the product database 210 to obtain information about the specific product associated with the product identifier.

The product terminal database 212 illustrated in Figure 7 includes a product terminal identifier field 400 which may contain information regarding each product terminal in communication with, or used with, a controller, such as the controller 140. The product terminal database 212 may also include a product identifier field 402 which may contain information about one or more products or services with which the product terminals identified in the product terminal field 400 are associated. While the product terminal database 212 illustrated in Figure 7 includes information for five product terminals 404, 406, 408, 410, 412 identified by the product terminal identifiers "PT-89-453," "PT-89-467," "PT-20-001," "PT-20-002" and "PT-20-004," respectively, in the product terminal identifier field 400, there is no theoretical limit to the number of product terminals for which information can be stored in the product terminal database 212 and different fields may be used in the product terminal database 212.

A tabular representation of a possible implementation of, or data structure for, the request database 214 is illustrated in Figure 8. The request database 214 stores information regarding information requests made by customers or devices and received during the step 102. Each information request received during an implementation of the step 102 may be associated with or assigned a distinct request identifier. The request database 214 then allows each information request to be stored and monitored.

The request database 214 may include a request identifier field 420 that may contain a unique identifier for each information request made by a customer or each information request received during the step 102. The request database 214 may include an information requested field 422 which may contain a description of the information requested by the customer for each request identified in the request identifier field 420. In addition, the request database 214 may include a product identifier field 424 that may contain a product or service identifier for a product or service referenced in the information requests made by customers. The request database 214 may also include fields related to delivery instructions provided by a customer and received during the step 104. For example, the request database 214 may include a contact identifier field 426 and a time or rule condition field 428. The contact identifier field 426 may contain e-mail addresses, facsimile numbers, telephone numbers, mailing or postal addresses, pager numbers, etc. In general, the contact identifier field 426 may contain information provided by a customer in the delivery instructions regarding where a response should be sent during the step 110. The time or rule condition field 428 may contain information regarding when, how or under what circumstances the response should be sent. For example, in a time condition, a customer may indicate that the customer wants the response sent immediately, on a specific date, in one hour after the information request is received during the step 102, etc. In a rule condition, a customer may indicate that the customer wants a response sent only after or in conjunction with a certain event, such as a holiday, birthday, store opening, store sale, etc. Time or rule condition information will typically be provided by customers in the delivery instructions provided by the customers. If a customer does not provide a time or rule condition in delivery instructions provided by the customer, a default condition of "immediately," "as soon as possible," etc. can be used.

The request database 214 illustrated in Figure 8 includes information for five information requests 430, 432, 434, 436, 438 made by customers, received during one or more implementations of the step 102, and identified by the request identifiers "R-283-1034," "R-283-1035," "R-283-1036," "R-059-0034" and "R-095-0531," respectively, in the request identifier field 420. There is no theoretical limit to the number of information requests for which information can be stored in the request database 214 and different fields may be used in the request database 214.

If desired, the request database 214 may also include a retailer or store identification field (not shown) for storing information or an identifier associated with a specific store or department of a store from which an information request originated. For example, if each of a plurality of stores has one or more product terminals in communication with a controller located remotely, or at least separate from, each of the stores, a store or retailer identifier may be attached to an information request processed by a product terminal or user device in a store prior to transmission of the information request to the controller. As a result, the information request can always be associated with the specific store from which it came from.

As illustrated in Figure 8, the information request 430 has a request identifier "R-283-1034." As indicated by the information requested field 422 and the product identifier field 424 for the information request 430 in the information request database, a customer apparently wanted to know what colors the product identified by the product identifier "P-01065-92" came in. By referring to or accessing the product identifier field 350, the color field 354 and the size field 356 in the product database 210 illustrated in Figures 6A and 6B, the product identifier "P-01065-92" can be determined to be associated with a red sweatshirt in a large size. In addition, as indicated by the contact identifier field 426 and the time or rule condition field 428 in the request database 214 for the information request 430, the customer indicated that the requested information should be sent to the e-mail address (BOB@ABC.COM) indicated in the contact identifier field 426 immediately.

As another example of the request database 214, the information request 432 has a request identifier "R-283-1035." As indicated by the information requested field 422 and the product identifier field 424 for the information request 432, a customer apparently wanted to know if the product identified by the product identifier "P-01065-92" is available in a size small. In addition, as indicated by the contact identifier field 426 and the time condition field 428 for the information request 432, the customer indicated that the requested information should be sent to the e-mail address and to the facsimile number indicated in the contact identifier field 426 on June 7, 2000, which might be or might be near someone's birthday. By referring to or otherwise accessing the product identifier field 350 and the size field 356 in the product database 210, the

product associated (*e.g.*, logo sweatshirt) with the product identifier "P-01065" can be determined to be available in a size small.

A tabular representation of a possible implementation of, or data structure for, the customer database 216 is illustrated in Figure 9. The customer database 216 can be used to store information about customers making information requests or customers for whom an information request is received during one or more implementations of the step 102. The customer database 216 may also be used to determine a contact identifier for a customer who does not supply complete delivery instructions or for whom only incomplete or non-addressable delivery instructions are received during the step 104. Some or all of the customers using the method 100 or the system 120 may be assigned or associated with a distinct customer identifier to allow tracking and monitoring of the customers' purchases, information requests, delivery instructions, and other transactions.

The customer database 216 illustrated in Figure 9 includes a customer identifier field 450 which may contain a unique customer identifier for each customer who has made an information request. The customer database 216 may also include a contact identifier field 452 which may contain contact information provided by the customers identified in the customer identifier field 450, in a similar fashion to the contact identifier field 426 for the request database 214 previously discussed above. The contact identifier field 452 may contain e-mail addresses, facsimile numbers, telephone numbers, mailing or postal addresses, pager numbers, etc. In general, the contact identifier field 452 may contain any information provided by a customer regarding where responses should be sent during the step 110 to information requests made by the customer. The information may be provided by the customer in many ways, including in delivery instructions provided by the customer and received during the step 104. The customer database 216 may also include a preferences or other known customer information field 454 which may contain any or all information known about a customer, inferred from information requests or purchases made by the customer, or otherwise provided by the customer. The preference information in the preference field 454 for a particular customer may also be gathered by a salesperson working with the customer. When the controller 140 receives an information request during the step 102, the controller 140 might access or use the customer database 216 to determine or

find customer preferences which may help determine or influence the appropriate response to provide to the customer. Furthermore, a customer's preferences may be directly indicated or registered with the controller 140 by the customer or may be indirectly determined by the controller 140 from the customer's previous interactions with the store or controller 140 (*e.g.*, from the customer's purchasing history).

The customer database 216 illustrated in Figure 9 includes information for five customers 456, 458, 460, 462, 464 identified by the customer identifiers "C-003320-123," "C-003320-124," "C-087354-362," "C-427724-234" and "C-257672-875," respectively, in the customer identifier field 450. There is no theoretical limit to the number of customers for which information can be stored in the customer database 216 and different fields may be used in the customer database 216.

As previously discussed, the controller 140 may, but does not necessarily, include a payment database 218. The payment database 218 can be used to store payment information for customers identified in the customer database 216. A tabular representation of a possible implementation of, or data structure for, the payment database 218 is illustrated in Figure 10. If desired, the payment database 218 can be combined with the customer database 216. Like the customer database 216 illustrated in Figure 9, the payment database 218 includes a customer identifier field 480 which may contain a unique customer identifier for each customer who has made an information request. In addition, the payment database 218 may include a payment identifier field 482 which may contain information regarding how the customers identified in the customer identifier field 480 are to be billed. For example, the payment identifier field 482 may include credit card information, debit card information, bank account numbers, financial account information, billing addresses, etc.

Similar to the customer database 216 illustrated in Figure 9, the payment database 218 includes information for five customers 484, 486, 488, 490, 492 identified by the customer identifiers "C-003320-123," "C-003320-124," "C-087354-362," "C-427724-234" and "C-257672-875," respectively, in the customer identifier field 480. There is no theoretical limit to the number of customers for which information can be stored in the payment database 218 and different fields may be used in the customer database 218. In addition, it is possible that not all customers in the customer database

216 will have payment identifiers in the payment database 218. Furthermore, there may be customers listed in the customer database 216 that are not in the payment database 218, and *vice versa*. The payment database 218 can also be combined with the customer database 216.

In some embodiments of the system 120, the controller 140 may include an information provider database 220. The information provider database 220 can be used to store information about providers of information about products or services. Information providers for products or services can include manufacturers, suppliers, distributors, retailers, government agencies, private organizations, a World Wide Web site, a local Better Business Bureau or other consumer protection organization, etc. In some embodiments, each information provider may be assigned or associated with a distinct information provider identifier.

The information provider database 220 also may be used to forward information requests received during the step 102 to a provider of information about a product or service. A tabular representation of a possible implementation of, or data structure for, the information provider database 220 is illustrated in Figure 11. The information provider database 220 may include a provider field 500 that may include the name or identity of manufacturers or other information providers and a provider contact identifier field 502 which may include information as to how to get in touch with the information provider, how to forward or send information requests to the information provider, how to find information about the information provider, etc. The information provider database 220 illustrated in Figure 11 includes information for five providers 504, 506, 508, 510, 512 identified as "ACME," "JOHNSON," "JONES & CO.," "ALGORION" and "KLINKER," respectively, in the provider field 500. There is no theoretical limit to the number of information providers for which information can be stored in the information provider database 220 and different fields may be used in the information provider database 220.

In some embodiments of the system 120, the controller 140 may include a response database 222. The response database 222 can be used to store information relating to responses provided to customers, or other people or communication or contact devices designated by customers, during one or more implementations of the step 110. In some embodiments, some or all of the responses provided during

implementations of the step 110 may be assigned or associated with a distinct response or request identifier. A tabular representation of a possible implementation of, or data structure for, the response database 222 is illustrated in Figure 12. The response database 222 may include a request identifier field 530 for storing identifiers for information requests received from one or more customers during one or more implementations of the step 102. The request identifier field 530 in the response database 222 can be identical or similar to the request identifier field 420 in the request database 214 illustrated in Figure 8 and previously discussed above. The response database 222 can also include a time/date of response transmission field 532 which may contain information regarding the time, date, etc., that responses are provided during one or more implementations of the step 110 for the information requests identified in the request identifier field 530. The response database 222 can also include a type of response field 534 which may contain information regarding the type of information contained in the responses to the information requests identified in the request identifier field 530.

The response database 222 illustrated in Figure 12 includes information for five information requests 536, 538, 540, 542, 544 made by customers, received during one or more implementations of the step 102, and identified by the request identifiers "R-283-1034," "R-283-1035," "R-283-1036," "R-059-0034" and "R-095-0531," respectively, in the request identifier field 530. There is no theoretical limit to the number of responses for which information can be stored in the response database 222 and different fields may be used in the response database 222. All or some of the response database 222 may also be combined with all or some of the request database 214 and in some embodiments the response database 222 and the request database 214 may be one and the same database.

The controller 140 may include a transaction database 224. The transaction database 224 can be used to store information relating to transactions made by customers. In some embodiments, some or all of the transactions made by customers may be assigned or associated with a distinct transaction identifier.

A tabular representation of a possible implementation of, or data structure for, the transaction database 224 is illustrated in Figure 13. The transaction database 224 may include a time/date field 550 for storing the time and date of transactions, a

customer identifier field 552 for storing information regarding the customer to or by whom the transaction was conducted or who is otherwise associated with the transaction, a product identifier field 554 for identifying the products and/or services involved in the transaction, an associated information request identifier field 556 for identifying any information request that may be related to the transaction, a form of payment field 558 for storing information regarding how the customer paid for the products and/or services involved in the transaction, and a total price field 560 for storing the total price paid by the customer during the transaction. The transaction database 224 may also include a transaction identifier field (not shown) by storing a unique number or identifier associated with each transaction.

The transaction database 224 illustrated in Figure 13 includes information for five transactions 562, 564, 566, 568, 570 made by customers. There is no theoretical limit to the number of transactions about which information can be stored in the transaction database 224 and different fields may be used in the transaction database 224.

SECOND SYSTEM EMBODIMENT

Referring to Figure 14, a second embodiment 600 of an apparatus or system usable with the method 100 will be described. The system 600 includes the controller 140 and the contact devices 142, 144, 146 previously described above. In addition, the system 600 includes product terminals 604, 606, 608 which function similarly to the product terminals 134, 136, 138 previously discussed above. In contrast to the system 120 illustrated in Figure 2, however, the system 600 does not include any user devices. Instead of using a user device, a customer or other user can provide information requests and delivery instructions directly to the product terminals 604, 606, 608.

During a possible implementation of the method 100 using the apparatus or system 600, a customer makes or provides an information request via one of the product terminals 604, 606, 608. For example, a customer in a pet store having the system 600 may want to receive information regarding the availability of a certain kind of tropical fish. The customer can make an information request regarding the availability of the tropical fish by entering the information request into one of the product terminals 604, 606, 608. The information request made by the customer is

received during the step 102 by the product terminal and preferably transmitted or otherwise provided to the controller 140. The customer may also provide delivery instructions via the same product terminal or a different product terminal. For example, the customer may want to receive an e-mail message or a facsimile message when the desired tropical fish become available. The customer will provide the e-mail address and facsimile number with a user device as part of the delivery instructions. The delivery instructions will be received during the step 104 by a product terminal and passed along to the controller 140. During the step 106, the controller may determine what type of information has been requested by the customer in the information request received from the customer during the step 102. For the previous example, the customer has requested availability information, *i.e.*, information regarding the availability of a certain kind of tropical fish. If desired, the controller 140 may also determine the appropriate response to the customer during the step 108. For the previous example, the customer should be sent a response during the step 110 to the designated e-mail address and facsimile number when the specified type of tropical fish is available at the store at which the customer made the information request. In general, the system 600 will be used in local implementations of the method 100 since a customer will most likely provide information requests and delivery instructions via a product terminal while the customer is located in, near or otherwise local to the store in which the product terminal resides.

THIRD SYSTEM EMBODIMENT

Referring now to Figure 15, a third embodiment 620 of an apparatus or system usable with the method 100 will be described. The system 620 includes the controller 140 and the contact devices 142, 144, 146 previously described above. In addition, the system 620 includes one or more user or client devices, such as the user devices 622, 624, 626 in communication with the controller 140 and at or with which customers can provide or make information requests which will be received by the controller 140 during the step 102 and delivery instructions which will be received by the controller 140 during the step 104. A user device may be carried by a customer as the customer moves through a store, mall, shopping center, trade show, or other shopping area. For example, in a remote implementation of the method 100 with the system 620, a

customer may use a personal computer as the user device 622 to remotely access, or communicate with, the controller 140 via the Internet, the World Wide Web, or any other public or private computer, telephone, radio, or communications network, and to provide information requests and delivery instructions to the controller 140. In a local implementation of the method 100 with the system 620, a store using the system 620 may have an in-store or localized telephone network, cellular telephone network, or other communication network specifically designed to work, communicate, and interact with one or more types of user devices, such as cellular telephones, personal digital assistant's, etc., to allow customers to provide information requests and delivery instructions while the customers are in, near or otherwise local to the store.

During use of the system 620 with the method 100, a customer provides an information request via a user device which is later transmitted or otherwise provided by the a communication port on the user device to a product terminal or to the controller 140. The controller 140 receives the information request during the step 102. The customer may also use the user device to generate and transmit delivery instructions that are received by the controller 140 during the step 104. For example, one, some, or all products in a store may have a unique product code, product tag, etc. associated with them. A customer carrying a user device, such as a personal digital assistant, may enter information from the code or tag into the user device as a part of the information request which can later be transmitted via a communication port on the user device to the controller 140 and received during the step 102. As an alternative example, a customer using a cellular or other mobile telephone as a user device may push buttons or keys on the cellular telephone to create DTMF (dual tone multi-frequency) signals that are received by the controller 140 via a public or private telephone network and used to ascertain the product of interest and/or the customer's information request and delivery instructions. As another alternative, the customer may provide voice input or commands into the cellular telephone which can be processed by a voice recognition system or interactive voice recognition unit in or accessed by the controller 140.

During the step 110, the controller 140 can send an appropriate response to the customer's information request to one or more of the contact devices 142, 144, 146 designated by the customer in the delivery instructions. As previously discussed above,

one or more of the user devices 622, 624, 626 may also be or function as a contact device and one or more of the contact devices 142, 144, 146 may also be or function as a user device. Therefore, it is possible for a customer to provide an information request using a device and then receive a response to the information request via the same device.

PROCESS DESCRIPTION

Referring again to Figures 1 and 2, the method 100 will be discussed in more detail with primary reference to the system 120. However, the following discussion of the method 100 will also apply generally to use of the systems 600 and 620 with the method 100.

During the step 102, an information request is received from a customer describing or listing information that the customer would like to receive regarding a product or service. The information request may be received during the step 102 by a product terminal or by a controller. In some embodiments, each information request will be assigned a request identifier and monitored in a request database, such as the request database 214.

A customer may make or otherwise provide the request received during the step 102 by a product terminal or the controller 140 in a variety of ways. The customer may use a user device, such as any one or more of the user devices 122, 124, 126, 128, 130, 132 to transmit or submit the information request received during the step 102. For example, the customer may use a user device having a touch screen as an input device. The customer can use the touch screen to select or enter the information request, *e.g.*, manufacturer information about a specific product. The user device can then transmit the information request to a product terminal or to the controller 140, such as by infrared or other wireless transmission. The customer may also use a product terminal, such as any one of the product terminals 134, 136, 138 to transmit or submit the information request received during the step 102. As previously discussed, the customer and/or the customer's user device may be located locally or remotely in relation to the product terminals and/or the controller 140 receiving the information request during the step 102.

A customer can submit many types of information requests. In addition, the customer may submit a plurality of information requests in a sequential or batch fashion. The information requests from the customer will be received during one or more implementations of the step 102. For example, a customer may use a personal digital assistant as a user device to create an information request requesting to receive descriptive information regarding a specific product (*e.g.*, is there any manufacturer information about this appliance?), descriptive information about related products (*e.g.*, are there any pants available in the same color as a specific shirt?), sales information about a service (*e.g.*, how many other people have bought this service?). Other examples of information requests that may be made by a customer and received during the step 102 include:

- Let me know when this product goes on sale.
- Let me know when this product goes on sale only if it is available in a size extra-large.
- Let me know when this product is discounted by thirty-five percent or more.
- Let me know when this product goes on sale only if available inventory falls below ten units.
- Let me know if other products become available in this color or size and by this product's designer.
- Let me know if other products are available that are similar to this product.
- Let me know if other products are available that are related to this product.
- What accessories are available for this product?
- What other colors are available for this product?
- What other sizes are available for this product?
- What other fabrics are available for this product?
- Send me the technical specifications for this product.
- Send me a catalog of products by this manufacturer.
- Send a catalog of products by this manufacturer to my mother.
- Have a manufacturer's representative call me regarding this product.
- Has anyone in my company bought this product?
- Send me a catalog of related products or services.

- How many other people have bought this service?
- Let me know when there are only ten of this product remaining.
- What other retailers carry this product?
- What other providers provide this service?
- What are alternatives to this product?
- What are alternatives to this service?
- What delivery options are available for this product?
- What features should I look for when purchasing a product like this one?
- Send me information about the manufacturer of this product.

If appropriate, a customer may also specify in an information request that a response to the information request be made or provided by one or specific information sources, such as a manufacturer of a product, a supplier of a product or service, a retailer, etc.

As another example of how a customer might make an information request that a controller, product terminal, or user device receives during the step 102, a customer may be allowed to choose from a limited or preselected menu, displayed on a user device or product terminal, what type of information the customer would like to receive. The customer may be permitted to select only one or more of the presented available information types. One sample menu available to a customer might be:

"1" = What other products do you have in this color?

"2" = What other sizes are available for this product?

"3" = What related products are in inventory for this product?

"4" = Tell me when this product goes on sale.

"5" = Tell me when this product goes on sale at a store closer to my home.

In a further example, a customer may be able to customize some parameters of predefined options. A sample menu available to a customer might be:

"1" = Tell me when this product goes on sale only if the sale price is at most $____ (type in the maximum amount willing to pay).

"2" = Do you have this product available in _____ (type in color or size)?

In a third example, an information request may express or register a customer's demand for a product or service as opposed to asking for information about a product

or service. For example, a customer could be presented with a menu having the following three options:

"1" = I would buy this product if it were cheaper.

"2" = I would buy this product if it were available in another color.

"3" = I do not want this product.

In this example, a response to the information request might include an acceptance or rejection of the customer's demand or a confirmation or receipt of the information request or of the condition underlying the information request.

A customer may manually include a product identifier as part of an information request provided by the customer. Alternatively, if a customer provides an information request to or via a product terminal and the product terminal is associated with a specific or single product, the information request received during the step 102 may include a product identifier and/or product terminal identifier provided by the product terminal that will help relate the information request to the specific product. Therefore, a product identifier or product terminal identifier can be automatically or manually appended or added to the information request created by the user. For example, the information request created by a customer and received during the step 102 may include a product terminal identifier "PT-89-453" which is associated with the product identifier "P-01065-92," as illustrated for the entry 404 for the product terminal database 212 illustrated in Figure 7, a portion of which is also illustrated in Figure 16.

If the product terminal is not associated with a specific or single product, a partial or complete product identifier and/or product terminal identifier may be included manually by the customer in the information request created by the customer. However, since the product terminal is not associated with a single product, it may not be possible for the product terminal to automatically append or include the product identifier in the information request since the product terminal may not be able to determine which specific product the customer is interested in or which specific product the information request relates to. In contrast, the product terminal identifier can be added to or included in the information request automatically by a product terminal with which the customer provides the information request. The product related to the customer's information request may then be determined from a combination of information supplied by the customer and the product terminal

identifier. The controller 140 can use the product identifier and or the product terminal identifier to determine the product or service in which the customer expressed interest and the appropriate response to such a request.

A customer's information request might also include a customer identifier. If so, a customer database may be kept, such as the customer database 216, that associates the information request with the customer identifier. Alternatively, the customer identifier may be stored in a request database, such as the request database 420.

During the step 104, delivery instructions are received from the customer. In a similar fashion to the information request, the customer may transmit or submit the delivery instructions via a user device or a product terminal which are then received by a product terminal or the controller 140. For example, either a user device or a product terminal may have a magnetic card reader that allows a customer to scan or swipe in a credit card, smart card, debit card, smart card, frequent shopper card, etc. from which the customer's name, postal address, e-mail address and other information can be determined so as to designate how and when a response to the customer's information request should be sent or otherwise provided.

A customer can submit many types of delivery instructions. In general, delivery instructions may include a contact identifier, such as a mailing address, e-mail address, telephone number, facsimile number, pager or beeper number, etc., and a rule or time condition governing when, how, or under what circumstances a response to a customer's information request should be sent. For example, a customer may want a response to the customer's information request sent as soon as possible to an e-mail address provided by the customer as the contact identifier in delivery instructions received during the step 104. Alternatively, a customer may want a response to the customer's information request mailed to the customer at the beginning of each week to a mailing address provided by the customer as the contact identifier in delivery instructions received during the step 104. As a further example, a customer may want a response to the customer's information request sent via facsimile machine at a number provided by the customer in delivery instructions only when a designated product or service becomes available. In a fourth example, a customer may want a response to the customer's information request provided when appropriate via e-mail and via facsimile

to an e-mail address and facsimile number provided by the customer in the customer's delivery instructions.

There may also be situations or embodiments in which the manner or delivery channels by which a customer can receive a response is limited or otherwise restricted. For example, a customer may be limited to only receiving a response via e-mail, via facsimile, etc.

The controller 140 preferably receives each information request received during the step 102 and the delivery instructions received during the step 104. The controller 140 may process each of the information requests and associated delivery instructions as they are received or periodically in a batch process (*e.g.*, during the night or off peak hours). If possible, the controller 140 can use a product identifier or product terminal identifier provided in or with the information request received during the step 102 to aid in processing the information request. For example, if an information request includes the product terminal identifier "PT-89-453" and/or the product identifier "P-01065-92" previously discussed above, the controller 140 can use the product identifier "P-01065-92" to consult the product database 210 to determine that the product associated with the product identifier "P-01065-92" is a sweatshirt, as illustrated in Figure 6A and in Figure 16. The controller 140 can also use the product database 210 to determine or locate other information about the product, such as the number of units of the product in inventory. The controller 140 may then store the information request and the delivery instructions in the request database 214. For example, for the information request entry 430 in the request database 214 illustrated in Figure 8, the controller 140 may relate the request identifier "R-283-1034" in the request identifier field 420 to the product identifier of interest "P-01065-92." In addition, when the information request is entered into the request database 214, but before the controller 140 has sent a response in accordance with the customer's delivery instructions, the controller 140 may indicate that the information request is "pending," as illustrated in the status field 670 in the request database 214 illustrated in Figure 16. Later, after the controller 140 has provided a response to the information request in accordance with the delivery instructions during the step 110, the controller 140 may indicate that the information request is "finished," as illustrated in the status field 672 in the request database 214 illustrated in Figure 16.

Since delivery instructions will usually include a contact identifier, the request database 214 can be updated with the contact identifier in the delivery instructions. In addition, the contact information can be cross-checked against the customer database 216 to determine if a customer identifier is associated with the contact identifier. If a contact identifier in a newly received set of delivery instructions matches a contact identifier previously stored in the customer database, the newly received information request can be associated with the customer identifier, thereby allowing a record or history of purchases, information requests, and other transactions to be maintained for the specific customer associated with the customer identifier.

During the step 106, the controller 140 preferably determines the type of information requested by the customer as indicated in the information request received during the step 102. Determining the type of information requested by the customer may comprise, for example:

- Determining which of a set of predetermined options the customer has selected.
- Determining which option the customer selected and the value or type the customer input into the selection (*e.g.*, tell me whether you have this product in blue, wherein "blue" is the value or type input provided by the customer).
- Accessing or searching a database to determine an implied type of information. A type of information may be implied based on any number of variables, including customer preferences, the selected product or service, the location of the store, the time of day, the time of year, or the market focus of the store. For example, it may be implied that any request for information about a power drill is a request for information about the manufacturer of the power drill.
- Accessing or searching a product database or information provider database to obtain information about the product or service inquired about by a customer in an information request.
- Analyzing the information request using artificial intelligence, grammar and speech analysis, human personnel, keyword searches, etc. to determine the product or service forming the basis of the customer's information request. After such analysis is complete, a product database or information source

database may be searched to obtain more information about the product or service that formed the basis of the customer's information request.

- Storing the information request to be served by a manager or other person or another computer system.

During the step 106, the controller 140 may also determine the particular product or service associated or related to the customer's information request. For example, if the customer's information request received during the step 102 includes a product identifier, the controller 140 can easily determine the product or service associated with the information request. If the information request includes a product terminal identifier, and each product terminal is associated with only a single product or service, the controller 140 can easily determine the product or service associated with the customer's information request by accessing or consulting the product terminal database 212 previously described above, specifically the product identifier field 402 and the product terminal identifier field 400 contained therein. If the information request includes a product terminal identifier, but product terminals are not associated with a specific product, or if the information request does not include a product terminal identifier, the controller 140 may analyze the information request using artificial intelligence, grammar and speech analysis, human personnel, etc. to determine the specific product or service that the customer has expressed interest in via the customer's information request. In addition, or alternatively, the controller 140 may send a query to the customer, either before the response is sent during the step 110 or as part of the response sent during the step 110, that asks the customer to provide more information or answers to one or more questions generated by the controller 140.

During the step 108, the controller 140 determines the appropriate response to the information request received during the step 102. Determining the appropriate response to the information request may comprise, for example:

- Retrieving a response associated with the information request from a database, such as the response database 222. For example, in an information request where a customer selects one or more types of information from a menu when making or providing an information request, each option available to the customer may have one or more predetermined responses stored in a database.

- Accessing or searching a database, such as a product database, to obtain some or all information stored in the database regarding the product or service of interest and providing it in a response to the person's information request.
- Querying another source for the information requested by the customer. For example, if a customer wants to know what other similar products are available from a certain manufacturer, the controller 140 may contact the manufacturer to answer this request. Alternatively, the controller 140 may forward the information request to the manufacturer. The controller 140 can obtain contact information for the manufacturer by accessing or consulting the information provider database 220. Forwarding the information request to an information provider, such as a manufacturer or retailer, along with the contact information, may in some embodiments be considered to be the response provided by the controller 140 during the step 110 if the information provider handles further communication with the customer regarding the information request.
- Queuing the response to be responded to by human personnel or computer system.
- Analyzing the information request using artificial intelligence, grammar and speech analysis, human personnel, keyword searches, etc. to determine or create an appropriate response to the information request. A product database or information source database may also be searched or accessed to obtain information about the product or service that formed the basis of the customer's information request and to help formulate the appropriate response.

In general, the steps 106 and 108 can be considered as generic or basic processing of the information request received during the step 102 and/or the delivery instructions received during the step 104. Other types of processing of an information request and/or delivery instructions that may occur between the steps 104 and 110, either as part of the steps 106 or 108, or in lieu of the steps 106 and 108, may include one or more of the following: determining at least one of a product or service associated with the information request or delivery instructions, maintaining, searching,

or updating a request database, customer database, product database, product terminal database, transaction database, response database, payment database or information provider database, searching or updating a database based on criteria in the information request or delivery instructions, determining a time stamp for the information request or delivery instructions, determining at least one customer identifier, product terminal identifier, product identifier, store identifier, contact identifier or request identifier associated with the information request or delivery instructions, forwarding the information request or delivery instructions to at least one information provider, forwarding the information request or delivery instructions to at least one manufacturer, retailer or supplier of a product associated with the information request or delivery instructions, determining at least one rule or time condition, or associating at least one request identifier, store identifier, product identifier, product, service, product terminal identifier, contact identifier, customer identifier, transaction identifier, payment identifier, information provider identifier or response identifier with the information request or delivery instructions.

During the step 110, the controller 140 provides a response to the customer's information request received during the step 102 in accordance with the customer's delivery instructions received during the step 104. For example, the controller 140 may send an e-mail to the customer or may queue the customer to be contacted over the telephone by a store representative.

There may be situations or cases where a customer has provided a rule or time condition as part of the delivery instructions, as previously described above. For example, a customer may request to receive an e-mail message whenever a particular product goes on sale. In such a situation, the controller 140 may delay sending a response until the appropriate rule or time condition has been met. Such a delay can be accomplished in many ways, such as, for example, by storing a date and time for the response, or an appropriate flag value in the request database 214 or the response database 222.

Another possible example of how a time delay might be incorporated into the delivery instructions received during the step 104 and used to send a response during the step 100 is illustrated in Figure 17. As illustrated in Figure 17, the step 110 includes a step 674 during which a controller, product terminal or other device conducts

an analysis or query to determine if a rule of time condition is included in the delivery instructions received during the step 104. If the response to the query during the step 674 is "no," the controller, product terminal, or other device transmits a response to one or more contact identifiers (*e.g.*, postal address, e-mail address, facsimile machine, etc.) received from the customer as part of the delivery instructions during the step 104.

If the response to the query during the step 674 is "yes," a controller, product terminal or other device makes a determination during a step 676 as to when a response should be sent. After the determination is made during the step 674, the time for the request may be optionally stored in a request database, such as in the time or rule condition field 428 in the request database 214 illustrated in Figure 8.

A timing loop or query 678 can then be used to delay sending a response until the appropriate time for sending the response arrives. When the appropriate or designated time to send the response arrives, the response is provided to the contact identifier in the delivery instructions during the step 675, as previously described above. Additionally, a copy or indication of the transmittal of the response might be stored during a step 679 in a response database, such as the response database 222 illustrated in Figure 12.

If desired, the controller 140 may store or save an indication or copy of the response sent during the step 110. The indication or copy of the response can be stored in the request database 214 or in the response database 222. Storing such an indication or copy of the response, and/or other information associated with the response, such as the time, date, or delivery method of the response, can be used for reporting, tracking, customer service, and quality assurance purposes. For example, the time between when an information request is received during the step 102 and when a response is sent during the step 110 may be an indication of the performance of a system implementing the method 100. The controller 140 may also update a customer database, such as the customer database 216, to reflect any contact identifiers or other information obtained from the customer's information request and delivery instructions.

SECOND METHOD EMBODIMENT

A second embodiment 680 of a method in accordance with the present invention is illustrated in Figure 18 and includes the steps 102, 104, 108, 110 previously

described above. The method 680 assumes that each product terminal is associated with only one product or service and that each information request will have a product terminal identifier included with it. In addition, the method 680 includes a step 682 wherein a product terminal, the controller 140, or a user device analyzes or processes the information request received from a customer during the step 102 to determine if the information request contains a product identifier. If the information request does not contain a product identifier, the product terminal database is accessed to determine a product identifier during a step 684. During a step 686, a product terminal, the controller 140, or a user device analyzes the information request to determine if the type of information the customer is interested in has been adequately specified or indicated in the information request. If the answer is "no," the customer may be queried during a step 688 as to the specific type of information desired by the customer. For example, the query may be in the form of a menu as previously described above. After the customer is queried during the step 688, the response to the query is received during the step 690. After the step 690, or if the answer to the analysis during the step 686 is "yes," the information request can then be stored in a request database during the step 692 and the method can continue to the steps 108 and 110 previously described above.

THIRD METHOD EMBODIMENT

A third embodiment 700 of a method in accordance with the present invention is illustrated in Figure 19 and includes the steps 102, 104, 106, 110 previously described above. In addition, the method 700 includes a step 702 during which an analysis or query is made to determine if the information requested by the customer as indicated in the information request received during the step 102 is contained in a product database, such as the product database 210 illustrated in Figures 6A and 6B. If the answer to the query during the step 702 is "yes," the information requested by the customer is retrieved or obtained from the product database during a step 704 and used to send a response to the customer during the step 110.

If the answer to the query during the step 702 is "no," a second query is made during a step 706 to determine if a manufacturer, supplier, or other information provider has the desired information. If the answer to the query during the step 706 is

"yes," the desired information is obtained from the manufacturer, supplier, or other information provider during a step 708 and used to send a response to the customer during the step 110. If the answer to the query during the step 706 is "no," the information request can be stored during a step 710 in a database, such as the information request database 214 for later processing or review.

If the answer to the query during the step 702 is "yes," the information request may be stored in a request database, such as the request database 214 illustrated in Figure 8, for further processing, which may be done by a product terminal, controller, or human. After such processing is completed, a response to the information request received during the step 102 can be provided during the step 110.

ADDITIONAL EXAMPLES AND EMBODIMENTS

As further elaboration of the flexibility, adaptability, and use of the methods 100, 680, 700 and the systems 120, 600, 620 of the present invention, several possible examples and embodiments of implementations or uses of the methods 100, 680, 700 and the systems 120, 600, 620 will now be described. These examples do not constitute a definition of all possible embodiments, and those skilled in the art will understand that the present invention is applicable to many other embodiments and implementations. Furthermore, although the following examples are briefly described for clarity, those skilled in the art will understand how to make any changes, if necessary, to the above-described systems and methods to accommodate these and other embodiments and applications.

In a first example of a local implementation of the methods of the present invention, a customer is walking by a rack of shirts at a department store and really likes the color and style of a particular line of shirt. She doesn't really want to buy the shirt, but she would love a pair of pants in the same color and style of the shirt. She looks around the store but doesn't see pants in that area of the store. She decides to get some more information about other products in that line so she takes out her user device 132, in this example a personal digital assistant, and transmits her indication of interest to a product terminal, such as the product terminal 138 on top of the rack of shirts. The product terminal may include an infrared receptor or detector that is activated whenever a customer transmits an information request or delivery

instructions. In this example, the transmission occurs using a wireless infrared transmission. The following menu is received by the personal digital assistant and displayed to her on its screen:

For more information on this product from the manufacturer, press 1;
For more information on similar products by the manufacturer, press 2;
For more information on similar products by other manufacturers, press 3;
For more information on similar products sold at this store, press 4;
For information on suggested complementary products carried by this store that go well with this product, press 5; or
To be informed when this product is discounted, press 6.

The customer presses "2" on her personal digital assistant or user device 132, and the personal digital assistant or user device 132, transmits the signal to the product terminal 138, thereby providing her information request which is received by the product terminal during the step 102. The personal digital assistant or user device 132 then presents the customer with a "Please enter your e-mail address" message. The customer enters her e-mail address into the personal digital assistant or user device 132 and transmits it to the product terminal 138, thereby providing her delivery instructions which are received by the product terminal during the step 104. The personal digital assistant or user device 132 then presents the customer with a "Thank you for your interest. The information you requested will be e-mailed to you" or other suitable message. The product terminal 138 transmits the customer's information request and delivery instructions to the controller 140 of the store, the reception of which by the controller 140 may also be considered as part of or the entire completion of the steps 102 and 104. The controller 140 looks up or otherwise finds other products from the manufacturer that the store carries, based on a product identifier associated with the product terminal 138 that forwarded the information request to the controller 140. Similarities between products may be determined in a variety of ways, such as by product codes, manufacturer codes, SKU numbers, manually, etc. The controller 140 retrieves information on other products by the manufacturer associated with the product for which information was requested and for which information is are stored in its products database and transmits the information on the products (*e.g.*, description, stock keeping unit (SKU), sizes available, colors available, price, digital image) to the e-mail

address provided by the customer. Information on associated products might be inferred from information requests or manually entered into the products database by store personnel, the manufacturer, etc.

The controller 140 can determine what type of information to provide to the customer because the menu selection "2" made by the customer is associated with a subroutine executed by the controller 140 that retrieves all products with an identifier that is associated with the product identifier of the product terminal 138 that forwarded the request to the controller 140. The information can then be provided to the customer during the step 110 via the e-mail address previously supplied by the customer.

In a second example of a local implementation of the methods of the present invention, another customer in the same store described in the above example walks by the same shirt. She would like to know more about the shirt from the manufacturer so she beams her contact information from her personal digital assistant or user device 132 to the product terminal 138 and selects "1". When the controller 140 receives this request from the product terminal 138, it requests that that user provide a mailing address, an e-mail address, or a telephone number as part of the customer's delivery instructions. Alternatively, the contact information may be extracted from the information request. After receiving a mailing addressing from the customer, the controller 140 forwards the information request and the customer's mailing address to a controller of the product manufacturer for processing and delivery of a response to the customer during the step 110.

In a third example of a local implementation of the methods of the present invention, a customer carrying a personal digital assistant as a user device is walking by a store that is currently closed and notices a product in the window for which he would like more information. The customer enters his delivery instructions (*e.g.*, send immediately via mailing address, e-mail address, etc.) and information request (*i.e.*, the type of information he would like to receive on the product) into his personal digital assistant. The personal digital assistant may then transmit the information request and delivery instructions through the store's window to a product terminal or a controller located in the store. The transmittal may be done via an infrared beam or other wireless transmission from his personal digital assistant to a product terminal associated with the

product in the store window and within a line-of-sight of the customer's personal digital assistant. The customer may ask for information such as:

- Let me know when this product goes on sale.
- Let me know when this goes on sale or if the price falls below one hundred dollars.
- Let me know when this goes on sale and inventory falls below twenty units.
- Send me a catalog of similar products.
- Let me know when only ten of this item remain in inventory.
- Send me consumer product reviews about this product.

The product terminal then forwards the delivery instructions and the information request to a controller, located either internally or externally to the store, which processes and responds to the customers information request in accordance with the delivery instructions. If the information request received during the step 102 does not contain enough specific information to allow the controller to determine an appropriate response to the customer's information request, the controller may query the customer to provide additional information. Such a query might be facilitated by, for example, presenting the customer with a menu list of options regarding the type of information the customer can request.

In a fourth example of a local implementation of the methods of the present invention, product terminals associated with products in a store have magnetic stripe readers and an associated keypad as input devices. Thus, a customer interested in a given product may swipe his credit card or smart card through the magnetic stripe reader and input his e-mail address or other delivery instructions via the keypad on a product terminal. If the product terminal is associated with more than one product, the customer may also enter in a product identifier for the product that the customer is interested in as part of the customer's information request. The customer may also enter or specify the price that the customer is willing to pay for the product when submitting the information request. The customer may not need to input an e-mail address if the e-mail address is already associated with that credit card in the retailer's customer database (*e.g.*, the customer previously registered this credit card or smart card with the retailer, it is a store issued credit card and the store has the customer

contact information from the credit card application, or the store retained the e-mail address from the last time the customer requested information).

Once the product terminal receives the information request and, if necessary, the delivery instructions, from the customer, the product terminal sends them to a controller that processes the information request and sends a response to the e-mail address. The response may include a purchase price, other information not specifically requested by the customer, or an offer or conditional offer (*e.g.*, an offer to sell a product or service to the customer at a certain price under certain conditions, at a certain location, for a limited time, specific payment terms, etc.) to sell the product to the customer. For example, the response might include an offer to sell the item to the customer for twenty dollars between December twenty-first and December twenty-fifth. When the customer receives the response via e-mail he may choose to purchase the product for which he received information. The customer may do this by replying to the e-mail, and the purchase amount for the product is preferably charged directly to the credit card that the customer used to request the information. The retailer may then ship the product to the customer, or the customer may return to the store to pick up the product. For example, once the customer indicates that he wishes to purchase the product, the retailer e-mails the customer a receipt to use when picking up the product. Of course, the customer may use another type of financial account identifier such as a debit card when requesting information. U.S. Patent Application Serial No. 09/220191 entitled "Method and Apparatus for Facilitating a Transaction Between a Buyer and One Seller," herein incorporated by reference, describes a method for a seller to receive buyer named prices for products and to determine whether or not to accept them.

In a fifth example of a local or remote implementation of the methods of the present invention, a customer is permitted to ask questions which pertain to his friends as part of his information request. Sample questions include: "Let me know when any of my friends purchase this product," or "Which of my friends have asked questions about this product," or "Send an e-mail about this product to all of my friends." In each of these example questions, the controller needs to access a buddy list database to determine who the friends of the customer are. One possible implementation of, or data structure for, a buddy list database 711 is illustrated in Figure 20.

The buddy list database 711 may include a customer identifier field 712 which may include information about customers and which can be similar to the customer identifier field 450 in the customer database 216. In addition, the buddy list database 711 may include a buddy list field 714 that contains references to other customers. The buddy list field 714 may also be included in the customer database 216 previously described above.

Similar to the customer database 216 illustrated in Figure 9, the buddy list database 711 includes information for five customers 716, 718, 720, 722, 724 identified by the customer identifiers "C-003320-123," "C-003320-124," "C-087354-362," "C-427724-234" and "C-257672-875," respectively, in the customer identifier field 712. There is no theoretical limit to the number of customers for which information can be stored in the buddy list database 711 or related customers which can be stored in the buddy list field 714 and different fields may be used in the buddy list database 711.

The buddy list or buddy list database entries for a customer may be submitted by the customer ahead of time, or it could be included in the customer's information request. In a variation of this example, the friends of a customer must have all registered with the retailer as well, in which case a controller may use information from the customer database to respond to the customer's request. The buddies may need to be contacted or otherwise give permission before being put into a customer's buddy list. In other variations, a customer can name anybody to be in his buddy list. Someone acting as an agent for at least one person, such as a personal shopper or buyer, might use a buddy list. For example, a personal shopper may want to send information regarding products to his or her clients, the list of clients forming the buddy list for the personal shopper.

Another potential use of a buddy list is as a registry. For example, over time, a customer may request information on a variety of products or services. The buddy list could be set up such that responses to the customer's information requests are sent to the people on the customer's buddy list prior to the customer's birthday, anniversary, or any other designated day. The response might include a reminder to the people on the buddy list of the particular event. In this type of use, personal data (*e.g.*, birthday) of the customer preferably will be collected and maintained in a customer database.

In a sixth example of a local or remote implementation of the methods of the present invention, rather than simply requesting information on a product via an associated product terminal, a customer may request information on products associated with a product she is currently purchasing while in a store or while shopping on-line. For example, the customer may be buying a suit and not have the time or fashion sense to pick out a shirt or shoes to go with it. As part of the customer's information request, the customer requests that the store send her recommendations for shirts and shoes that would go well with the suit she is purchasing. Alternatively, a customer purchasing a computer may request that the manufacturer send her information on scanners that are compatible with the computer. The customer may submit this request to, for example, the cashier at a point-of-sale terminal, or to a product terminal located at the point-of-sale terminal in a local implementation or via on-line access to the store's World Wide Web site in a remote implementation. The request may then be associated with the purchased product and the customer.

In a seventh example of a local implementation of the methods of the present invention, a customer browsing in a store might request manufacturer or other information for a specific product from an information provider. If the controller 140 does not have access to a product database having such manufacturer information, the controller 140 might attempt to access or obtain product information from the manufacturer or other information provider. One possible implementation 750 of this, which might be conducted as part of, or in replace of, the steps 108 and 110 or the steps 708 and 110 previously discussed above, is illustrated in Figure 21. The implementation 750 includes a step 752 during which the controller 140 accesses or otherwise communicates with an information provider database, such as the information provider database 220 illustrated in Figure 11, to obtain contact information for the information provider. During a step 754, the controller preferably queries the information provider about the product in which the customer has expressed interest and receives a response from the information provider during a step 756. The response received from the information provider during the step 756 can be used as all or part of the response sent during a step 758 in a manner similar to the step 110 previously discussed above.

In an eighth example of a local implementation of the methods of the present invention, a customer registers with a store at some point (*e.g.*, at a point of sale terminal, via a kiosk, at a customer service desk, etc.) and is issued a "Request Card" or "Frequent Shopper Card." The "Request Card" or "Frequent Shopper Card" could be a proximity card or a magnetic stripe card. The identifier on the card is associated with the customer's delivery instructions or any other customer information stored in a controller's customer database. From this point on, if the customer wishes to request information on a product he may use the issued card (*e.g.*, by swiping the magnetic stripe card through a magnetic stripe reader or "waving" his proximity card in front of a proximity reader). In this scenario, the delivery instructions stored in the customer database can be used to provide the response during the step 110. This example illustrates how the step 104 may occur before the step 102 and how the steps 102, 104 may occur at significantly different times. The card used by the customer may be store specific or issued by a central service and be good at several participating stores.

In a ninth example, a remote implementation of the methods of the present invention, a customer provides an information request via access to a store's World Wide Web site. A response to a customer's request for information is not e-mailed to the customer but is instead posted on the customer's "personal shopping web site." Thus, a customer may register with a specific store or chain of stores or a central service for a personal shopping World Wide Web page with a unique uniform or universal resource locator (URL). The contact information submitted by the customer as part of the customer's delivery instructions when requesting information includes this URL. The controller will use this URL to post a response to the customer's request for information. The customer can then access this URL to view the information on each of the products for which he expressed interest. Additionally, the customer may be able to purchase the products displayed on the web page. For example, there may be a "purchase" button next to each product whose information is presented on the customer's personal web page. When the customer actuates this button, his interest in purchasing the item may be transmitted to the seller of the item (if the Web site is hosted by a third party service) or processed by the seller of the item (if the seller hosts the Web site). The customer may need to input his financial account identifier in order to complete the purchase of the product. Alternatively, the financial account number

may be associated with the URL and automatically transmitted or processed by the seller once the customer indicates a willingness to purchase an item.

In a tenth example of a local or remote implementation of the methods of the present invention, a customer may submit a price or conditional purchase offer she is willing to pay for a product as part of or in lieu of a request for more information about the product. The conditional purchase offer constitutes the information request received during the step 102. In processing the information request, a controller determines whether or not the price is acceptable (*e.g.*, whether it is above a minimum acceptable price stored in association with the product). The controller then uses the customer's contact information or delivery instructions to inform the customer of whether or not his price was accepted. This embodiment may be combined with the above-described credit card embodiment in that the customer may swipe his credit card through a magnetic stripe reader when submitting a price for a product. In this case that credit card (or debit card) account would be charged (or debited) for the price the customer named if the customer's price was accepted. For example, a customer submits an information request containing a conditional purchase offer of the form, "I'll buy that green sweater for $50 if you have it in size 10." This conditional purchase offer happens to be submitted through a product terminal, which then forwards the offer along to the controller. The controller will receive this offer, access a product database to determine the availability of the green sweater in size ten, and check to see if the purchase price of fifty dollars is acceptable. If the sweater is available and the price is acceptable, then the controller will bind the customer to the purchase price, complete the transaction, and indicate an acceptance of the customer's conditional purchase offer to the customer. The controller may also charge or debit the customer's account or credit or debit card appropriately and provide an appropriate indication that the product should be delivered or sent to the customer. If the customer's conditional purchase offer is not accepted for any reason, the controller will preferably send a response to the customer indicating a rejection of the customer's conditional purchase offer. Alternatively, the conditional purchase offer may stay pending until it is fulfilled or accepted. Thus, the customer's conditional purchase offer forms a standing or continuous order or demand that is good or valid until the customer cancels it or until the offer is accepted. A customer's offer, order, demand or

conditional purchase offer may be used by a controller to create or update an offer database of such offer's or conditional purchase offers.

U.S. Patent No. 5,794,207 entitled "Method and Apparatus for a Cryptographically Assisted Commercial Network System Designed to Facilitate Buyer Driven Conditional Purchase Offers," herein incorporated by reference, discloses a method of buyers submitting offers for a product, and co-pending U.S. Patent Application Serial No. 09/220191 entitled "Method and Apparatus for Facilitating a Transaction Between a Buyer and One Seller," herein incorporated by reference, describes a method for a seller to receive buyer-named prices for products and to determine whether or not to accept them.

In a situation where a customer indicates in an information request a desire to purchase a product or includes in the information request a conditional purchase offer to purchase a product, a user device, product terminal, or controller may determine if the information request includes a payment identifier specifying how the customer is going to pay for the product. Alternatively, if the information request does not contain a payment identifier, a user device, product terminal, or controller may access a customer or payment database, such as the payment database 218 illustrated in Figure 10, to determine if a payment identifier exists for the customer. If no payment identifier exists in either the information request received during the step 102 or in a customer or payment database, the user device, product terminal, or controller may query the customer to provide a payment identifier.

In an eleventh example of a local or remote implementation of the methods of the present invention, a controller stores all customer information requests for data warehousing purposes. The resulting database of information would be similar to the request database 214 described earlier, except that information requests would not be deleted from the database as they are filled. This large database of requests may be useful for many purposes, including tracking customer preferences (*e.g.*, Dee always asks if clothes are available in black), determining sales patterns (*e.g.*, people are much more interested in acid-washed blue jeans during the fall season), and planning new product lines and sales (*e.g.*, lots of people asked which pants match a certain sport coat). In some implementations, information from this database of requests can be reconciled with information from other databases, including transactional logs, mailing

lists, and telemarketing databases to enhance the data warehousing, inventory management, or data mining function.

In a twelfth example of a local or remote implementation of the methods of the present invention, in addition to, or in lieu of, sending a response during the step 110, a controller receiving an information request might forward the information request and the customer's delivery instructions to a manufacturer, retailer, another store, etc. as a referral. The manufacturer, retail, store, etc. to whom the referral is sent can then provide a response to the customer in accordance with the customer's delivery instructions. A store or entity providing such a referral may receive compensation or a commission fee for making the referral. Such a referral system will allow new stores and established stores to benefit. For example, established stores can benefit from their excess information requests or traffic even if they do not possess the particular product a customer is seeking by providing referrals to other stores. New stores, or less well established stores, can also benefit by receiving the referrals and providing responses to customers. This example illustrates how a controller or store receiving an information request during a step 102 may not be the controller or store that provides a response to the information request during the step 110.

In a thirteenth example, a local implementation of the methods of the present invention, a customer may use a smart card to store information about the customer or about specific products that the customer is interested in. For example, a customer may store product identifiers on the smart card. Such product identifiers may be placed on the smart card by swiping the smart card through a magnetic card writer that places the information on the smart card. The magnetic card writer may be a product terminal, a user device, or a component in a controller, product terminal or user device. This type of system could be implemented offline where a product terminal simply outputs a product identifier to be read by the customer's smart card.

The smart card can act as a form of "shopping cart" on which the customer stores product identifiers. The "shopping cart" or product identifiers may be uploaded to a World Wide Web site. If a customer buys a product at a store other than the store at which the customer obtained the product identifier on the smart card, the store at which the customer obtained the product identifier on the smart card can be credited,

compensated, or otherwise rewarded for interesting the customer in the purchased product.

In a fourteenth example of a local or remote implementation of the methods of the present invention, a product terminal or user device may include a biometric scanner or reader, such as a fingerprint scanner. For example, a product terminal associated with a specific product may have a fingerprint scanner. A customer can indicate interest in the product merely by pressing his or her thumb against the fingerprint scanner. The fingerprint scanner can be used to identify the customer and to generate a customer identifier associated with the fingerprint. The information request may be implied or limited to a certain type of information such that the customer does not need to supply any further information or details in the information request. In addition, previously supplied delivery instructions from the customer and associated with the fingerprint or the customer identifier may be used to determine how to supply the response to the customer.

As shown by the previous examples, the relationships between information requests and responses to the information requests can be one-to-one, one-to-many, many-to-one, and many-to-many. For example, in a one-to-one situation, a single information request is received from a customer and a single response is created in response to the information request. In a one-to-many situation, a single information request may generate multiple responses to the single customer, such as when a customer asks to be notified of a price or availability of a product on a weekly basis. As another example of a one-to-many relationship, a single information request from a customer might result in copies of the same response being sent to multiple people, such as the customer's buddy list. In a many-to-one situation, multiple information requests from a single customer might be collected and a single response sent to the customer. In a many-to-many situation, multiple information requests from a single customer might result in copies of the same responses being sent to multiple people, such as the customer's buddy list.

The foregoing description is considered as illustrative only of the principles of the invention. Furthermore, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and process shown and described above. Accordingly, all suitable

modifications and equivalents may be resorted to falling within the scope of the invention as defined by the claims that follow. For example, while most of the examples have been directed towards products the disclosed methods will work equally well with services. In addition, many, if not all, of the steps described above are optional or can be combined or performed in one or more alternative orders or sequences without departing from the scope the present invention and the claims should not be construed as being limited to any particular order or sequence, unless specifically indicated. For example, the steps 102, 104 may be combined or performed in reverse order. Likewise, the steps 106, 108 may be omitted, considered optional, combined, or performed in reverse order. Either or both of the steps 106, 108 may also occur before the step 104. The methods disclosed herein are not limited to any specific type of computer or communications network or system topology, architecture, software, connection protocols, routing schemes, management or control procedures, or hierarchy.

As another example, some or all of any one or more of the databases 210, 212, 214, 216, 218, 220, 222, 224, 680 can be stored on one or more product terminals or other database servers. In addition, one or more separate devices, including one or more product terminals, user devices, or contact devices could perform some or all of the functionality of the controller 140. If desired, the controller 140 can also function as a product terminal or user device. Furthermore, some or all of the functionality of a product terminal may be performed by the controller, a user device, a contact device, or some other server, client device, computer, or computing device. Like a product terminal, a user device or controller may also be associated with one or more specific products or services.

The methods described above are not limited to the type of information requested in an information request received during the step 102. Therefore, information requests may include requests for information about a feature of a product, a feature of a service, an availability of a product, an availability of a service, a price of a product, a price of a service, a notification of promotions associated with a product, a notification of promotions associated with a service, an explanation of promotions associated with a product, an explanation of promotions associated with a service, a set of instructions for a product, an existence of products similar to a product, an existence

of services similar to a service, or an explicit relationship between two or more products or services. Information requests might also include one or more of the following: an offer to purchase a product or a service, a conditional purchase offer to purchase a product or a service, a demand registration for a product or service, a product identifier, a customer identifier, a product terminal identifier, an order, a manufacturer identifier, or a payment identifier. Information requests can take many forms, such as a voice message, a text message, one or more DTMF tones, a binary data stream, an e-mail message, a binary file, an image, software code, an executable program, an applet, a radio signal, an electromagnetic signal, one or more keystrokes, or an alphanumeric message. Likewise, the methods described above are not limited regarding the information in a delivery request of the form of a delivery request. For example, delivery instructions might comprise or include: a contact identifier, a customer identifier, a rule condition, a time condition, at least one delivery channel for said response, instructions associated with providing said response to at least one person other than said customer, a contact identifier for at least one person other than said customer, instructions that said response should be provided on a specific date, a voice message, a text message, one or more DTMF tones, a binary data stream, an e-mail message, a binary file, an image, software code, an executable program, an applet, a radio signal, an electromagnetic signal, one or more keystrokes, or an alphanumeric message.

Similarly, the methods described above are not limited to the type of information included in a response or the form of the response sent during the step 110. Therefore, responses to information requests may include information regarding at least one feature of a product, information regarding at least one feature of a service, information regarding availability of a product, information regarding availability of a service, information regarding price of a product, information regarding price of a service, information regarding related products, information regarding related services, information regarding similar products, information regarding similar services, a predetermined reply to an expression of interest in a product, a predetermined reply to an expression of interest in a service, advertising information, a commitment to provide additional information at a later date, an offer for sale of a product, a conditional offer for sale of a product, an offer for sale of a service, a conditional offer for sale of a

service, purchase instructions for a product, purchase instructions for a service, use instructions for a product, use instructions for a service, a query for further information from a customer, an acceptance of a customer offer, an acceptance of a customer conditional purchase offer, a rejection of a customer offer, a rejection of a customer conditional purchase offer, a confirmation of receipt of said information request, an indication that at least one additional response will be provided, a confirmation of an order, a customer identifier, a contact identifier, a manufacturer identifier, a voice message, a text message, one or more DTMF tones, a binary data stream, an e-mail message, a binary file, an image, software code, an applet, an executable program, a radio signal, an electromagnetic signal, one or more keystrokes, or an alphanumeric message.

A user device and/or a contact device can comprise or otherwise include many things, such as: a personal digital assistant, computer, dumb terminal, keyboard, computer mouse, microphone, magnetic card reader, smart card reader, portable personal computer, pager, beeper, mobile telephone, cellular telephone, radio, television, customer wearable device, touch memory device, kiosk, point-of-sale terminal, bar code reader, optical scanner, product terminal, proximity detector, retinal scanner, voiceprint analyzer, fingerprint scanner, voice recognition system, interactive voice response unit, SKU reader, or facsimile machine.

Each of the methods described above can be performed on a single computer, computer system, microprocessor, etc. In addition, two or more of the steps in each of the methods described above could be performed on two or more different computers, computer systems, microprocessors, etc., some or all of which may be locally or remotely configured. The methods can be implemented in any sort or implementation of computer software, program, sets of instructions, code, ASIC, or specially designed chips, logic gates, or other hardware structured to directly effect or implement such software, programs, sets of instructions, or code. The computer software, program, sets of instructions, code can be storable, writeable, or savable on any computer usable media or other program storage device or media such as a floppy or other magnetic or optical disk, magnetic or optical tape, CD-ROM, hard disk drive, Zip™ disk, flash or optical memory card, microprocessor, solid state memory device, RAM or ROM chip(s), PROM or EPROM device, etc.

The connections between product terminals, user devices, contact devices, and controllers discussed herein is only meant to be generally representative of cable, computer, telephone, or other communication or data networks and methods for purposes of elaboration and explanation of the present. The connections are also intended to be representative of, and include all or a part of, the Internet, the World Wide Web, and other privately or publicly operated networks, including wide area networks, local area networks, data communication networks or connections, intranets, routers, satellite links, microwave links, cellular telephone or radio links, fiber optic transmission lines, ISDN lines, T1 lines, etc. In addition, as used herein, the terms "computer," "user device," "terminal," "client," and "client device" are generally interchangeable and are meant to be construed broadly and to include, but not be limited to, all clients, client devices or machines, personal digital assistants and palm top computers, cash registers, terminals, computers, point-of-sale devices, processors, servers, etc. connected or connectable to a computer or data communications network and all devices on which Internet-enabled software, such as the NETSCAPE COMMUNICATOR™ or NAVIGATOR™ browsers, MOSIAC™ browser, or MICROSOFT INTERNET EXPLORER™ browsers, can operate or be run. The term "browser" should also be interpreted as including Internet-enabled software and computer or client software that enables or allows communication over a computer network and Internet-enabled, monitored, or controlled devices such as WebTV™ devices, household appliances, phones, etc.

The words "comprise," "comprises," "comprising," "include," "including," and "includes" when used in this specification and in the following claims are intended to specify the presence of stated features, elements, integers, components, or steps, but they do not preclude the presence or addition of one or more other features, elements, integers, components, steps, or groups thereof.

CLAIMS:

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. An apparatus, comprising:

a controller;

a first product terminal associated with at least one of a product or service and in communication with said controller, said first product terminal adapted to receive an information request and delivery instructions and to provide said information request and said delivery instructions to said controller; and

wherein said controller is adapted to receive said information request and said delivery instructions from said first product terminal and to provide a response to said information request in accordance with said delivery instructions.

2. The apparatus of claim 1, further comprising:

a user device adapted to receive said information request and said delivery instructions from a customer and to provide said information request and said delivery instructions to at least one of said first product terminal and said controller.

3. The apparatus of claim 2, wherein said user device includes at least one of the following:

a contact device,

a personal digital assistant (PDA),

a computer,

a dumb terminal,

a keyboard,

a computer mouse,

a microphone,

a magnetic card reader,

a smart card reader,

a portable personal computer,
a pager,
a beeper,
a mobile telephone,
a cellular telephone,
a radio,
an antenna,
a transmitter,
a television,
a customer wearable device,
a touch memory device,
a kiosk,
a point-of-sale terminal,
a bar code reader,
an optical scanner,
a product terminal,
a proximity detector,
a retinal scanner,
a voiceprint analyzer,
a fingerprint scanner,
a voice recognition system,
an interactive voice response unit (IVRU),
a SKU reader, or
a facsimile machine.

4. The apparatus of claim 2, wherein said user device is associated with at least one of a product or service.

5. The apparatus of claim 2, wherein said user device may store a plurality of information requests.

6. The apparatus of claim 5, wherein said user device is adapted to provide all of said plurality of information requests to said first product terminal.

7. The apparatus of claim 5, wherein said user device may provide only some of said plurality of information requests to said first product terminal.

8. The apparatus of claim 2, wherein said user device is associated with a specific customer.

9. The apparatus of claim 2, wherein said information request is directed to at least one of a specific product or a specific service.

10. The apparatus of claim 1, wherein said controller creates said response.

11. The apparatus of claim 1, wherein said controller forwards said information request to an information provider.

12. The apparatus of claim 11, wherein said controller receives said response from said information provider prior to providing said response in accordance with said delivery instructions.

13. The apparatus of claim 1, further comprising:
a contact device adapted to receive said response.

14. The apparatus of claim 13, wherein said contact device comprises at least one of the following:
a user device,
a personal digital assistant (PDA),
a computer,
a dumb terminal,
a portable personal computer,
a pager,
a beeper,
a mobile telephone,
a cellular telephone,
a radio,
a television,
a customer wearable device,

a touch memory device,
a printer,
a display,
a recording device,
a kiosk,
a point-of-sale terminal,
a memory device,
a facsimile machine, or
a voice answering machine.

15. The apparatus of claim 13, wherein said contact device is adapted to provide said information request.

16. The apparatus of claim 15, wherein said contact device is associated with a specific customer.

17. The apparatus of claim 1, wherein said delivery instructions include a contact identifier.

18. The apparatus of claim 17, wherein said contact identifier includes at least one of the following:

a name,
a customer identifier,
an indication of a financial account,
an e-mail address,
a postal address,
a telephone number,
a radio frequency,
a signal frequency,
a facsimile number,
a pager number,
a beeper number,
a universal resource locator (URL),
a web site address,

an electronic computer network address,

a communication address of said customer, or

a communication address of at least one person other than said customer.

19. The apparatus of claim 1, wherein said delivery instructions include at least one of a rule condition or a time condition.

20. The apparatus of claim 1, further comprising a first user device and a second user device, wherein said first product terminal is adapted to receive said information request from said first user device and said delivery instructions from said second user device.

21. The apparatus of claim 1, wherein said controller has access to at least one of the following:

a database containing information associated with said information request,

a database containing information associated with said delivery instructions,

a product database,

a product terminal database,

a request database,

a customer database,

a payment database,

an information provider database,

a response database,

a transaction database,

a buddy list database, or

an offer database.

22. The apparatus of claim 1, wherein said controller includes at least one of the following:

a database containing information associated with said information request,

a database containing information associated with said delivery instructions,

a product database,

a product terminal database,

a request database,

a customer database,

a payment database,

an information provider database,

a response database,

a transaction database,

a buddy list database, or

an offer database.

23. The apparatus of claim 1, further comprising:

a second product terminal associated with at least one of a product or service and in communication with said controller, said second product terminal adapted to receive at least one additional information request and to provide said at least one additional information request to said controller.

24. An apparatus, comprising:

a controller;

a plurality of product terminals, each of said plurality of product terminals associated with at least one of a product or service and in communication with said controller, wherein each of said plurality of product terminals is adapted to receive an information request and delivery instructions and to provide said information request and said delivery instructions to said controller;

at least one user device in communication with at least one of said plurality of product terminals, said at least one user device adapted to generate said information request and to provide said information request to at least one of said plurality of product terminals; and

wherein said controller is adapted to receive said information request from at least one of said plurality of product terminals and to provide a response to said information request.

25. The apparatus of claim 24, wherein said at least one user device is adapted to generate said delivery instructions and to provide said delivery instructions to at least one of said plurality of product terminals.

26. The apparatus of claim 24, wherein said controller is adapted to provide said response in accordance with said delivery instructions.

27. The apparatus of claim 24, further comprising:

at least one contact device adapted to receive said response.

28. The apparatus of claim 24, wherein said at least one user device is located remotely from said controller.

29. The apparatus of claim 24, wherein said at least one user device is located locally to said controller.

30. The apparatus of claim 24, wherein at least one of said plurality of product terminals is located remotely from said at least one user device.

31. The apparatus of claim 24, wherein at least one of said plurality of product terminals is located locally to said at least one user device.

32. The apparatus of claim 24, wherein at least one of said plurality of product terminals is located remotely from said controller.

33. The apparatus of claim 24, wherein at least one of said plurality of product terminals is located locally to said controller.

34. The apparatus of claim 24, wherein said controller forwards said information request to an information provider.

35. The apparatus of claim 34, wherein said controller forwards said delivery instructions to said information provider.

36. The apparatus of claim 34, wherein said controller receives said response from said information provider.

37. The apparatus of claim 24, wherein said controller is adapted to generate said response.

38. An apparatus, comprising:

a controller;

at least one user device in communication with said controller, said at least one user device adapted to generate an information request and associated delivery instructions and to provide said information request and said associated delivery instructions to said controller; and

wherein said controller is adapted to receive said information request and said associated delivery instructions from said at least one user device and to provide a response to said information request.

39. The apparatus of claim 38, wherein said controller is further adapted to provide said response in accordance with said delivery instructions.

40. The apparatus of claim 38, wherein said controller is adapted to create said response.

41. The apparatus of claim 38, further comprising:

a contact device in communication with said controller and adapted to receive said response.

42. A method for operating an information system, comprising:

receiving an information request from a customer, wherein said information request is associated with at least one of a product or service;

receiving delivery instructions from said customer, wherein said delivery instructions are associated with said information request and include at least one contact identifier;

determining at least one type of information requested by said customer; and

providing at least one response to said information request in accordance with said delivery instructions.

43. The method of claim 42, wherein said at least one type of information requested by said customer includes at least one of:

a feature of a product,
a feature of a service,
an availability of a product,
an availability of a service,
a price of a product,
a price of a service,
a notification of promotions associated with a product,
a notification of promotions associated with a service,
an explanation of promotions associated with a product,
an explanation of promotions associated with a service,
a set of instructions for a product,
an existence of products similar to a product, or
an existence of services similar to a service.

44. The method of claim 42, further comprising:
determining an appropriate response to said information request.

45. The method of claim 42, wherein said response includes at least one of:
information regarding at least one feature of a product,
information regarding at least one feature of a service,
information regarding availability of a product,
information regarding availability of a service,
information regarding price of a product,
information regarding price of a service,.
information regarding related products,
information regarding related services,
information regarding similar products,
information regarding similar services,

a predetermined reply to an expression of interest in a product,
a predetermined reply to an expression of interest in a service,
advertising information,
a commitment to provide additional information at a later date,
an offer for sale of a product,
a conditional offer for sale of a product,
an offer for sale of a service,
a conditional offer for sale of a service,
purchase instructions for a product,
purchase instructions for a service,
use instructions for a product,
use instructions for a product.
a query for further information from said customer,
an acceptance of a customer offer,
an acceptance of a customer conditional purchase offer,
a rejection of a customer offer,
a rejection of a customer conditional purchase offer,
a confirmation of receipt of said information request,
an indication that at least one additional response will be provided,
a confirmation of an order,
a customer identifier,
a contact identifier,
an information provider identifier,
a voice message,
a text message,
one or more DTMF tones,
a binary data stream,
an e-mail message,
a binary file,
an image,
software code,
an applet,

an executable program,
a radio signal,
an electromagnetic signal,
one or more keystrokes, or
an alphanumeric message.

46. The method of claim 42, wherein said information request includes at least one of the following:

a request for information about at least one specific product,
a request for information about at least one specific service,
an explicit relationship between two or more products or services,
a voice message,
a text message,
one or more DTMF tones,
a binary data stream,
an e-mail message,
a binary file,
an image,
software code,
an executable program,
an applet,
a radio signal,
an electromagnetic signal,
one or more keystrokes,
an alphanumeric message,
an offer,
a conditional purchase offer,
a demand,
a product identifier,
a customer identifier,
a contact identifier,
a product terminal identifier,
an order,

an information provider identifier,
a manufacturer identifier, or
a payment identifier.

47. The method of claim 42, wherein said delivery instructions include at least one of the following:

a customer identifier,
a rule condition,
a time condition,
at least one delivery channel for said response,
instructions associated with providing said response to at least one person other than said customer,
a contact identifier for at least one person other than said customer,
instructions that said response should be provided on a specific date,
a voice message,
a text message,
one or more DTMF tones,
a binary data stream,
an e-mail message,
a binary file,
an image,
software code,
an executable program,
an applet,
a radio signal,
an electromagnetic signal,
one or more keystrokes, or
an alphanumeric message.

48. The method of claim 42, wherein said response includes an offer for the customer to purchase at least one of a product or service.

49. The method of claim 48, further comprising:
receiving an acceptance of said offer from said customer.

50. The method of claim 42, wherein said response includes information not requested by said customer.

51. The method of claim 50, further comprising:
receiving a second information request from said customer, said second information request being associated with said information not requested by said customer included in said response.

52. The method of claim 42, further comprising:
receiving a second information request from said customer, said second information request being associated with said response provided to said customer.

53. The method of claim 42, wherein said receiving an information request from a customer occurs after said receiving delivery instructions from said customer.

54. The method of claim 42, wherein said receiving an information request from a customer occurs at least a first time period after said receiving delivery instructions from said customer.

55. The method of claim 42, further comprising:
providing said response to at least one person other than said customer.

56. The method of claim 42, further comprising:
receiving additional delivery instructions from at least one person other than said customer.

57. The method of claim 56, further comprising:
providing said response to said at least one person other than said customer in accordance with said additional delivery instructions.

58. The method of claim 57, further comprising:

receiving an information request from at least one of said at least one person other than said customer.

59. The method of claim 42, wherein said delivery instructions include instructions that said response should be provided before, during, or after the occurrence of a specific event.

60. The method of claim 59, wherein said specific event comprises at least one of:

a change in price of a product,
a change in price of a service,
a change in availability of a product,
a change in availability of a service,
a sale at a designated store location,
a sale at a store location within a designated distance of a location provided by said customer,
a sale at a store location at which said information request was generated,
an opening of a new store location,
a holiday,
said customer's birthday,
a birthday of someone other than said customer,
said customer's anniversary,
an anniversary of someone other than said customer,
a particular time of day,
a particular day of a week, or
a particular day of year.

61. The method of claim 42, wherein said providing at least one response to said information request in accordance with said delivery instructions occurs relative to the occurrence of a specific event designated in said delivery instructions.

62. The method of claim 42, further comprising:
processing said information request.

63. The method of claim 62, wherein said processing said information request includes at least one of the following:

determining at least one appropriate response to said information request,

determining at least one of a product or service associated with said information request,

determining at least one product identifier associated with said information request,

determining at least one product terminal associated with said information request,

maintaining a request database,

updating a request database,

searching a request database,

searching a customer database,

searching a product database,

searching a product terminal database,

searching an information provider database,

searching a database based on criteria in said information request,

updating a database based on criteria in said information request,

determining a time stamp for said information request,

determining at least one customer identifier associated with said information request,

determining at least one product terminal identifier associated with said information request,

determining at least one store identifier associated with said information request,

forwarding said information request to at least one information provider,

forwarding said information request to at least one manufacturer of a product associated with said information request,

forwarding said information request to at least one supplier of a product or service associated with said information request,

determining at least one rule condition,

determining at least one time condition,

associating at least one information provider identifier with said information request,

associating at least one request identifier with said information request,

associating at least one store identifier with said information request,

associating at least one product identifier with said information request,

associating at least one product with said information request,

associating at least one service with said information request,

associating at least one product terminal identifier with said information request,

associating at least one contact identifier associated with said information request,

associating at least one customer identifier with said information request, or

associating at least one request identifier with said information request.

64. The method of claim 42, further comprising:

processing said delivery instructions.

65. The method of claim 64, wherein said processing said delivery instructions comprises at least one of the following:

determining at least one contact identifier,

determining at least one customer identifier,

determining at least one time condition,

determining at least one rule condition,

searching a customer database,

searching an information provider database,

updating a request database,

maintaining a request database,

searching a request database,

manually gathering information required for said response,

searching a database based on criteria in said information request,

searching a database based on criteria in said delivery instructions,

updating a database based on criteria in said information request,

updating a database based on criteria in said delivery instructions,

associating at least one customer identifier with said delivery instructions,

associating at least one request identifier with said delivery instructions,

associating at least one contact identifier with said delivery instructions,

associating at least one response identifier with said delivery instructions,

associating at least one store identifier with said delivery instructions,

forwarding said delivery instructions to at least one manufacturer of a product associated with said information request,

forwarding said delivery instructions to at least one supplier of a product or service associated with said information request,

forwarding said information request to at least one information provider, or

forwarding said delivery instructions to at least one information provider.

66. The method of claim 42, further comprising:

compiling a customer database from information requests received from customers.

67. The method of claim 66, further comprising:

using the customer database to collect information on customer preferences.

68. The method of claim 42, wherein said information request is received from a user device.

69. The method of claim 68, wherein said user device is also a contact device.

70. The method of claim 68, wherein said user device is associated with at least one of a specific product or a specific service.

71. The method of claim 68, wherein said information request is directed to at least one of a specific product or a specific service and said user device is associated with said at least one of a specific product or a specific service.

72. The method of claim 42, wherein said response is provided to a contact device.

73. The method of claim 72, wherein said contact device is associated with said customer.

74. The method of claim 72, wherein said contact device is associated with at least one person other than said customer.

75. The method of claim 72, wherein said contact device is associated with at least one of a specific product or a specific service.

76. The method of claim 75, wherein said information request is directed to at least one of a specific product or a specific service and said contact device is associated with said at least one of a specific product or a specific service.

77. The method of claim 42, wherein said response is provided to a device from which said information request was received.

78. The method of claim 42, wherein said response is provided to at least one device other than a device from which said information request was received.

79. The method of claim 42, wherein said delivery instructions include a contact identifier.

80. The method of claim 79, wherein said contact identifier includes a customer identifier.

81. The method of claim 80, further comprising at least one of the following:

using said customer identifier to identify said customer,

using said customer identifier to search a database,

using said customer identifier to update a database,
using said customer identifier to determine delivery instructions, or
using said customer identifier to provide said response to said customer.

82. The method of claim 42, further comprising:
providing said information request to a third party.

83. The method of claim 82, further comprising:
receiving a response to said information request from said third party.

84. The method of claim 82, wherein said providing a response to said information request in accordance with said delivery instructions is conducted by said third party.

85. The method of claim 82, further comprising:
providing said delivery instructions to said third party.

86. The method of claim 42, further comprising:
restricting said customer to providing only one type of contact identifier in said delivery instructions.

87. The method of claim 42, wherein said delivery instructions are restricted to only one type of contact identifier.

88. The method of claim 42, further comprising at least one of the following:
compiling a response database from responses to information requests received from customers, or
compiling a request database from information requests received from customers.

89. The method of claim 42, further comprising:
compiling a buddy list database from delivery instructions received from customers.

90. The method of claim 89, further comprising:

searching said buddy list database to obtain information associated with said delivery instructions.

91. The method of claim 42, further comprising:

compiling a product terminal database.

92. The method of claim 91, further comprising:

associating at least one product terminal with one of a product or service.

93. The method of claim 42, further comprising:

compiling a product database.

94. The method of claim 93, further comprising:

searching said product database to obtain information associated with said information request.

95. The method of claim 42, wherein said information request comprises an offer to purchase at least one of a product or service.

96. The method of claim 95, wherein said offer to purchase comprises a standing offer to purchase.

97. The method of claim 95, wherein said response includes an offer to sell said at least one of a product or service that matches said offer to purchase.

98. The method of claim 95, further comprising:

maintaining said offer to purchase until said offer is accepted.

99. The method of claim 95, wherein said offer to purchase comprises a conditional purchase offer.

100. The method of claim 95, further comprising one of the following:

accepting said offer to purchase,

rejecting said offer to purchase, or

compiling an offer database.

101. The method of claim 95, wherein said response comprises at one of the following:

an acceptance of said offer, or

a rejection of said offer.

102. The method of claim 42, wherein said information request comprises an order of at least one of a product or service.

103. The method of claim 102, wherein said response includes a confirmation of an acceptance of said order.

104. The method of claim 102, further comprising:

maintaining said order until said order is fulfilled.

105. The method of claim 42, further comprising:

providing a menu of at least one options to said customer.

106. The method of claim 105, wherein said information request is associated with at least one of said at least one options.

107. The method of claim 42, wherein said information request registers said customer's demand for at least one of a product or service.

108. The method of claim 42, further comprising:

receiving a customer identifier.

109. The method of claim 108, wherein said customer identifier is based on biometric information of said customer.

110. An article of manufacture, comprising:

a computer usable medium having a computer readable program means embodied therein for operating an information system, the computer readable program means in said article of manufacture comprising:

computer readable program means for receiving an information request from a customer, wherein said information request is associated with at least one of a product or service;

computer readable program means for receiving delivery instructions from said customer, wherein said delivery instructions are associated with said information request and include at least one contact identifier;

computer readable program means for determining at least one type of information requested by said customer; and

computer readable program means for providing at least one response to said information request in accordance with said delivery instructions.

111. The article of manufacture of claim 110, said computer readable program means in said article of manufacturer further comprising:

computer readable program means for determining an appropriate response to said information request.

112. The article of manufacture of claim 110, said computer readable program means in said article of manufacturer further comprising:

computer readable program means for providing said response to at least one of the following:

said customer;

at least one person different from said customer.

113. In a system having means for operating an information system, a method comprising:

receiving an information request from a customer, said information request being associated with at least one of a product or service;

receiving delivery instructions from said customer, said delivery instructions being associated with at said information request and including at least one contact identifier;

determining at least one type of information requested by said customer; and

providing at least one response to said information request in accordance with said delivery instructions.

114. The system of claim 113, said method further comprising:

determining an appropriate response to said information request.

115. An apparatus for operating an information system, comprising:

means for receiving an information request from a customer, wherein said information request is associated with at least one of a product or service;

means for receiving delivery instructions from said customer, said delivery instructions being associated with said information request and including at least one contact identifier;

means for determining at least one type of information requested by said customer; and

means for providing at least one response to said information request in accordance with said delivery instructions.

116. The apparatus of claim 115, further comprising at least one of the following:

means for determining at least one appropriate response to said information request,

means for providing said information request, or

means for receiving said response.

117. The apparatus of claim 115, further comprising:

means for providing said response to at least one of the following:

said customer, or

at least one person other than said customer.

118. A method for operating an information system, comprising:

providing a request for information associated with at least one of a product or service

providing delivery instructions associated with said request for information; and

receiving a response to said request for information in accordance with said delivery instructions.

119. The method of claim 118, further comprising:

providing a reply to said response.

120. The method of claim 119, wherein said reply comprises at least one of:

a request to purchase said at least one of a product or service,

a request to reserve said at least one of a product or service,

a request for further information regarding said at least one of a product or service,

a request for notification of an event,

a request for information regarding complimentary products or services,

a request for information on related products or services,

an offer to purchase said at least one of a product or service, or

a conditional offer to purchase said at least one of a product or service.

121. The method of claim 118, wherein said information request is provided via a user device.

122. The method of claim 121, wherein said response is provided via a contact device.

123. The method of claim 121, wherein said response is provided via said user device.

124. The apparatus of claim 118, wherein said delivery instructions include a contact identifier.

125. An article of manufacture, comprising:

a computer usable medium having a computer readable program means embodied therein for operating an information system, the computer readable program means in said article of manufacture comprising:

computer readable program means for providing a request for information associated with at least one of a product or service;

computer readable program means for providing delivery instructions associated with said request for information; and

computer readable program means for receiving a response to said request for information.

126. An information system, comprising:

means for providing a request for information associated with at least one of a product or service;

means for providing delivery instructions associated with said request for information; and

means for receiving a response to said request for information.

127. An information system, comprising:

a memory;

a communication port; and

a processor connected to said memory and said communication port, said processor being operative to:

receive an information request from a customer, wherein said information request is associated with at least one of a product or service;

receive delivery instructions from said customer, wherein said delivery instructions are associated with said information request and include at least one contact identifier;

determine at least one type of information requested by said customer; and

provide at least one response to said information request in accordance with said delivery instructions.

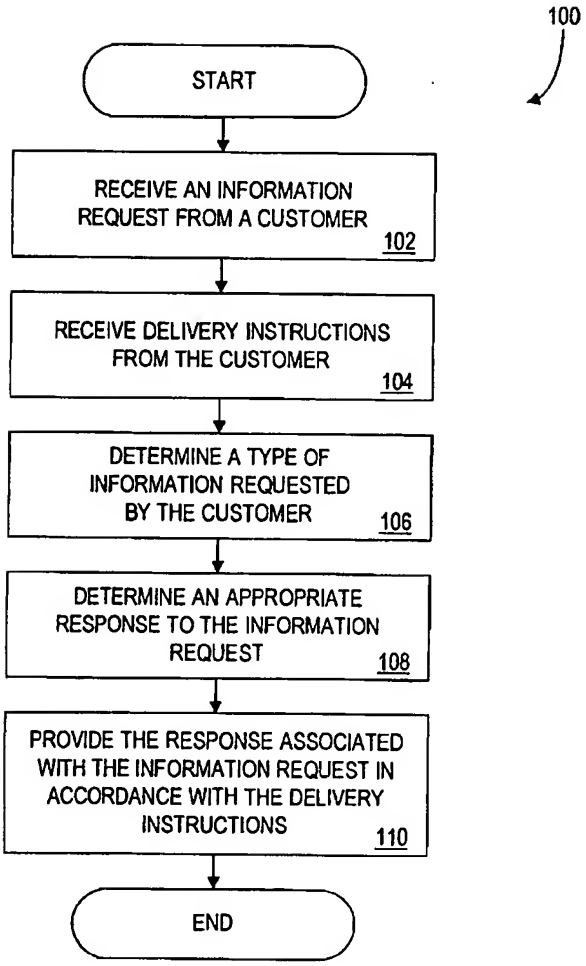

100
START
RECEIVE AN INFORMATION REQUEST FROM A CUSTOMER
102
RECEIVE DELIVERY INSTRUCTIONS FROM THE CUSTOMER
104
DETERMINE A TYPE OF INFORMATION REQUESTED BY THE CUSTOMER
106
DETERMINE AN APPROPRIATE RESPONSE TO THE INFORMATION REQUEST
108
PROVIDE THE RESPONSE ASSOCIATED WITH THE INFORMATION REQUEST IN ACCORDANCE WITH THE DELIVERY INSTRUCTIONS
110
END

FIG. 1

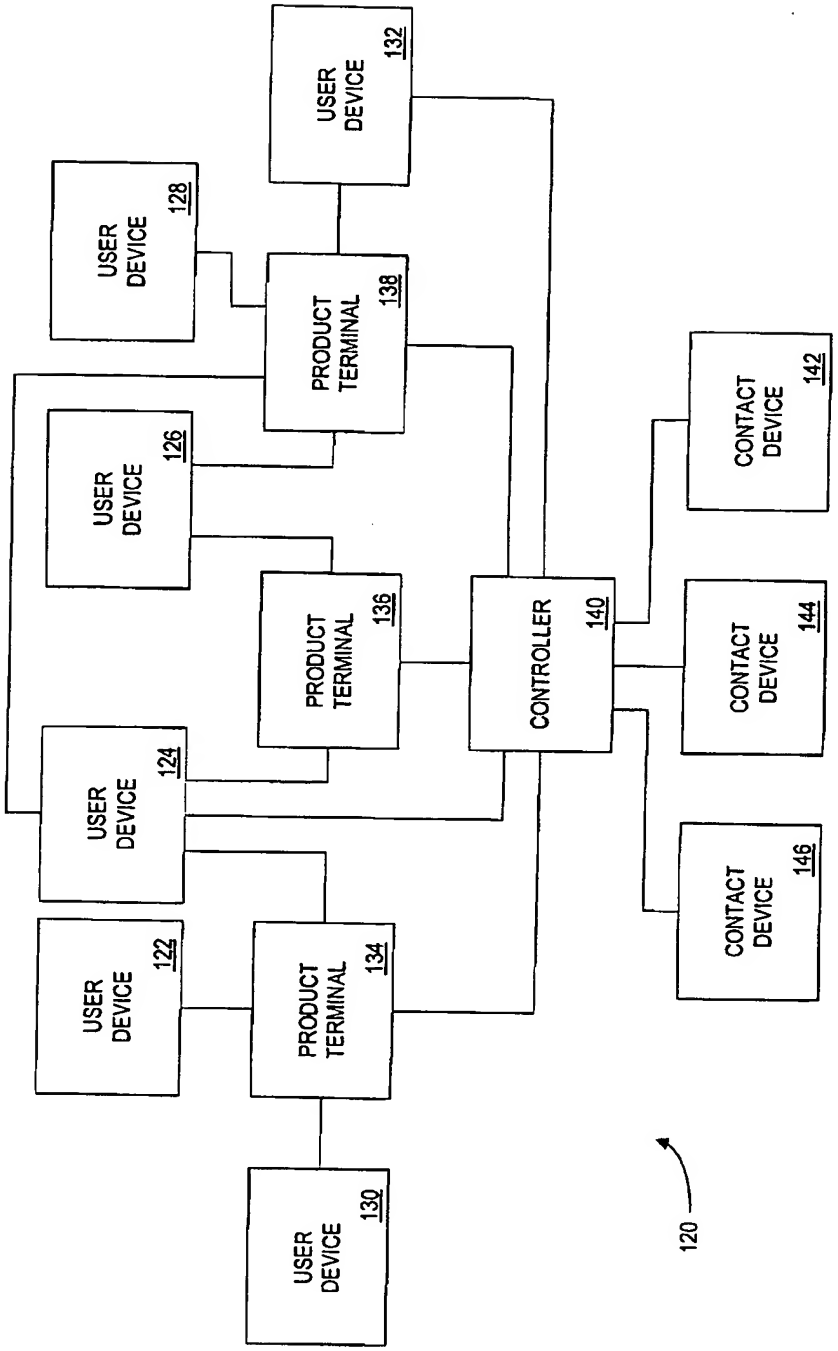
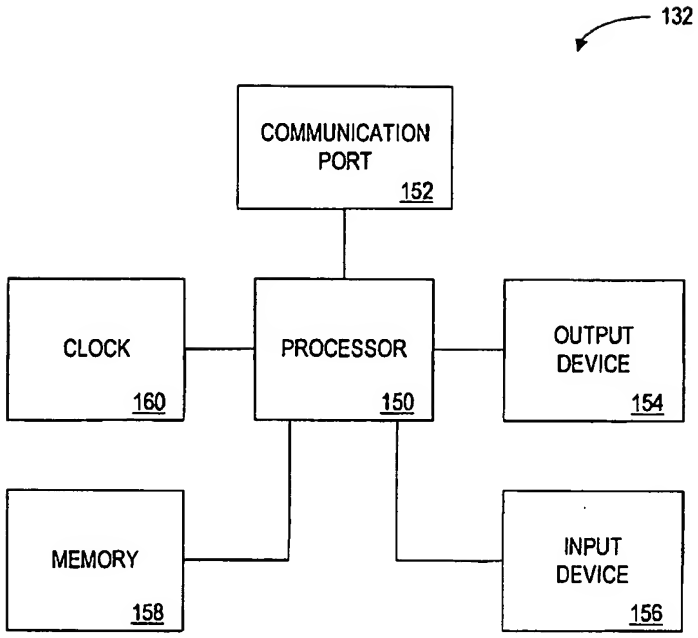

USER DEVICE 132
USER DEVICE 128
PRODUCT TERMINAL 138
USER DEVICE 126
CONTACT DEVICE 142
PRODUCT TERMINAL 136
CONTROLLER 140
CONTACT DEVICE 144
USER DEVICE 124
CONTACT DEVICE 146
USER DEVICE 122
PRODUCT TERMINAL 134
USER DEVICE 130
120

FIG. 2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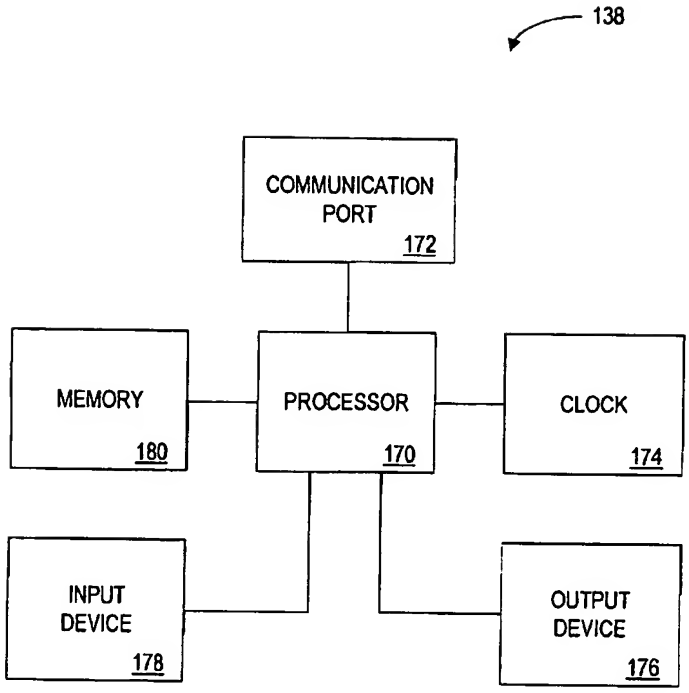
COMMUNICATION PORT
152
CLOCK
160
PROCESSOR
150
OUTPUT DEVICE
154
MEMORY
158
INPUT DEVICE
156

FIG. 3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COMMUNICATION PORT
172
MEMORY
180
PROCESSOR
170
CLOCK
174
INPUT DEVICE
178
OUTPUT DEVICE
176

FIG. 4

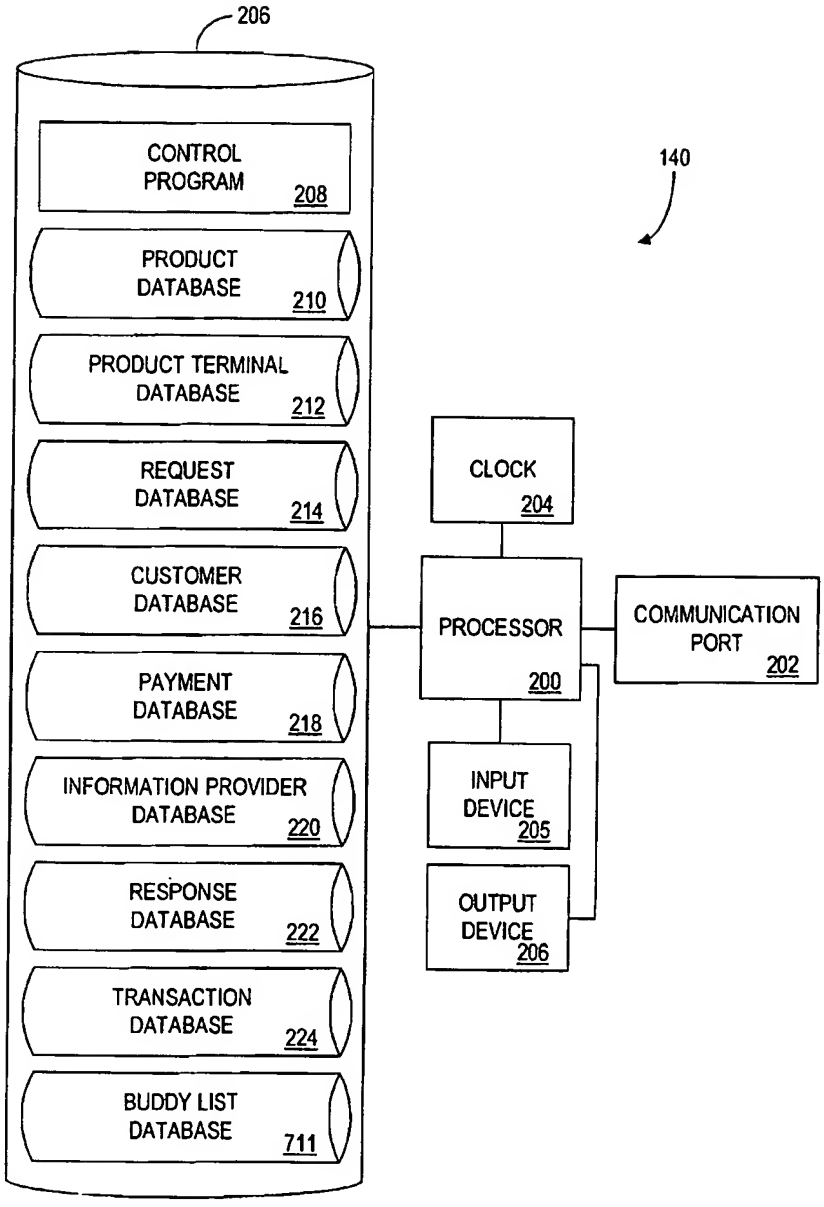
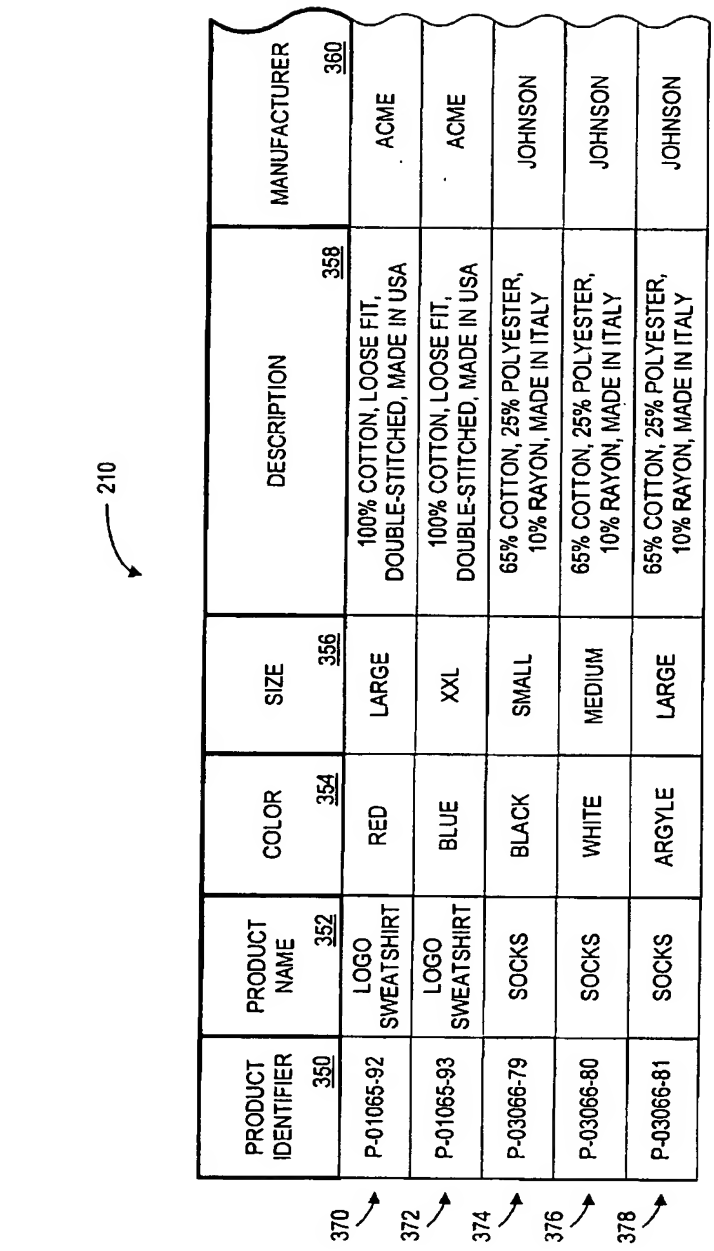

206
CONTROL PROGRAM 208
PRODUCT DATABASE 210
PRODUCT TERMINAL DATABASE 212
REQUEST DATABASE 214
CUSTOMER DATABASE 216
PAYMENT DATABASE 218
INFORMATION PROVIDER DATABASE 220
RESPONSE DATABASE 222
TRANSACTION DATABASE 224
BUDDY LIST DATABASE 711
140
CLOCK 204
PROCESSOR 200
COMMUNICATION PORT 202
INPUT DEVICE 205
OUTPUT DEVICE 206

FIG. 5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PRODUCT IDENTIFIER 350
PRODUCT NAME 352
COLOR 354
SIZE 356
DESCRIPTION 358
MANUFACTURER 360
370
P-01065-92
LOGO SWEATSHIRT
RED
LARGE
100% COTTON, LOOSE FIT, DOUBLE-STITCHED, MADE IN USA
ACME
372
P-01065-93
LOGO SWEATSHIRT
BLUE
XXL
100% COTTON, LOOSE FIT, DOUBLE-STITCHED, MADE IN USA
ACME
374
P-03066-79
SOCKS
BLACK
SMALL
65% COTTON, 25% POLYESTER, 10% RAYON, MADE IN ITALY
JOHNSON
376
P-03066-80
SOCKS
WHITE
MEDIUM
65% COTTON, 25% POLYESTER, 10% RAYON, MADE IN ITALY
JOHNSON
378
P-03066-81
SOCKS
ARGYLE
LARGE
65% COTTON, 25% POLYESTER, 10% RAYON, MADE IN ITALY
JOHNSON

FIG. 6A

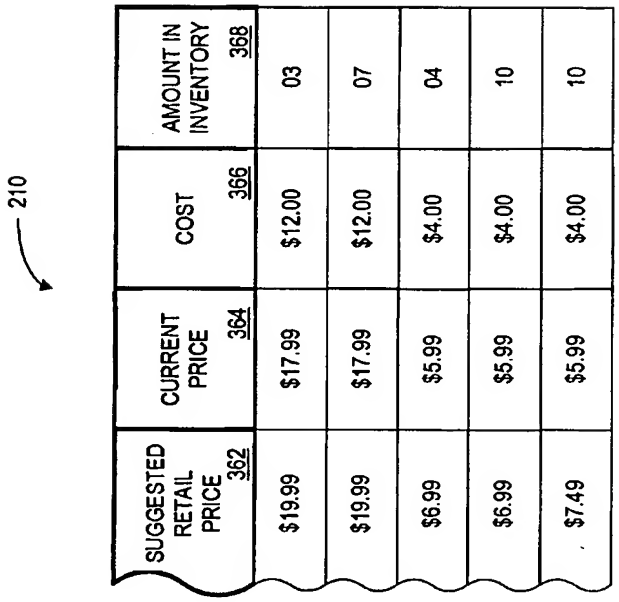
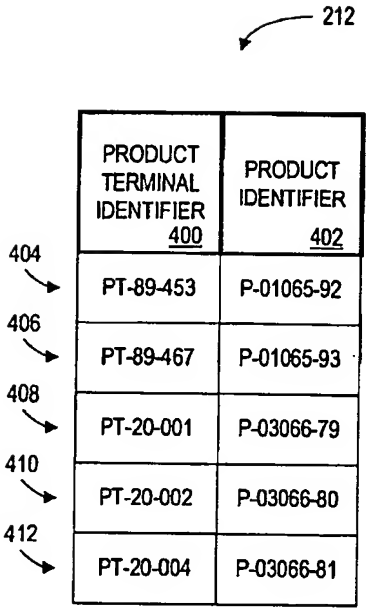

210
SUGGESTED RETAIL PRICE 362
CURRENT PRICE 364
COST 366
AMOUNT IN INVENTORY 368
$19.99 $17.99 $12.00 03
$19.99 $17.99 $12.00 07
$6.99 $5.99 $4.00 04
$6.99 $5.99 $4.00 10
$7.49 $5.99 $4.00 10

FIG. 6B



PRODUCT TERMINAL IDENTIFIER 400	PRODUCT IDENTIFIER 402
PT-89-453	P-01065-92
PT-89-467	P-01065-93
PT-20-001	P-03066-79
PT-20-002	P-03066-80
PT-20-004	P-03066-81

FIG. 7

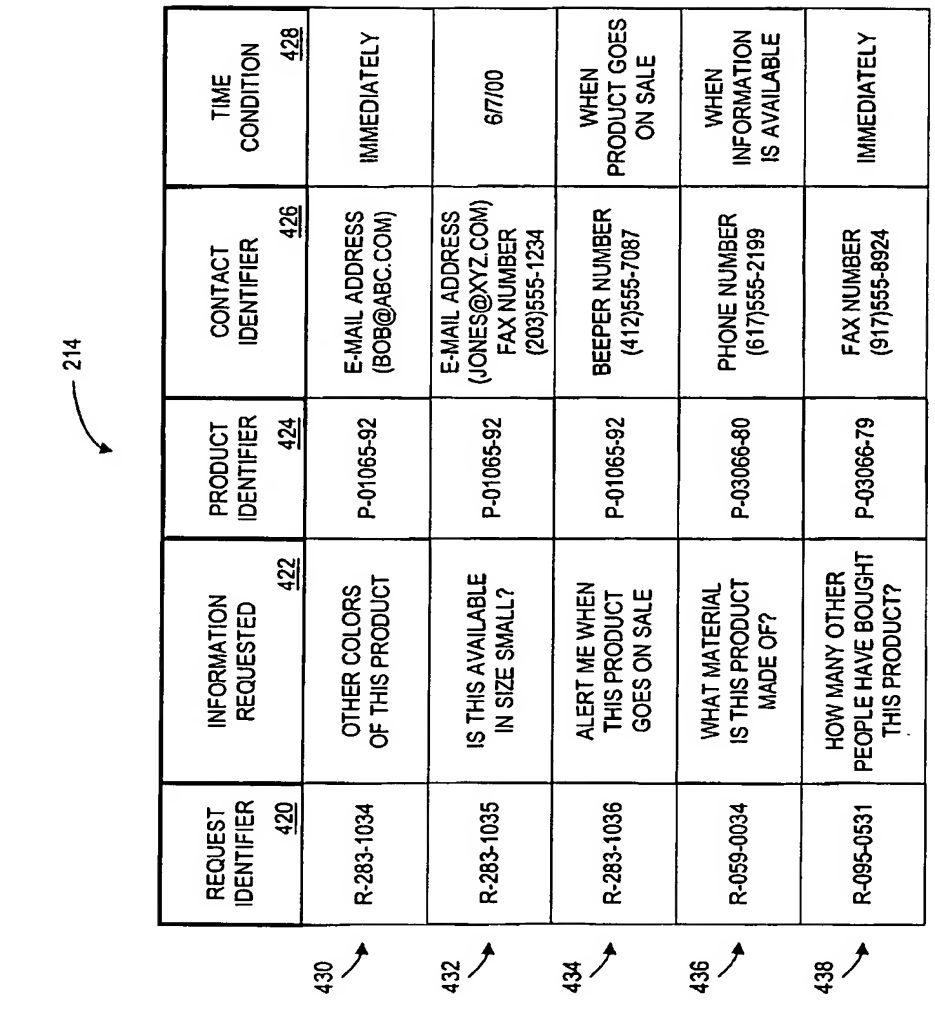

214
REQUEST IDENTIFIER 420
INFORMATION REQUESTED 422
PRODUCT IDENTIFIER 424
CONTACT IDENTIFIER 426
TIME CONDITION 428
430
R-283-1034
OTHER COLORS OF THIS PRODUCT
P-01065-92
E-MAIL ADDRESS (BOB@ABC.COM)
IMMEDIATELY
432
R-283-1035
IS THIS AVAILABLE IN SIZE SMALL?
P-01065-92
E-MAIL ADDRESS (JONES@XYZ.COM) FAX NUMBER (203)555-1234
6/7/00
434
R-283-1036
ALERT ME WHEN THIS PRODUCT GOES ON SALE
P-01065-92
BEEPER NUMBER (412)555-7087
WHEN PRODUCT GOES ON SALE
436
R-059-0034
WHAT MATERIAL IS THIS PRODUCT MADE OF?
P-03066-80
PHONE NUMBER (617)555-2199
WHEN INFORMATION IS AVAILABLE
438
R-095-0531
HOW MANY OTHER PEOPLE HAVE BOUGHT THIS PRODUCT?
P-03066-79
FAX NUMBER (917)555-8924
IMMEDIATELY

FIG. 8

CUSTOMER IDENTIFIER 450	CONTACT IDENTIFIER 452	PREFERENCES 454
C-003320-123 (456)	E-MAIL ADDRESS (BOB@ABC.COM)	SIZE 8, LOVES GREEN
C-003320-124 (458)	POSTAL ADDRESS JILL BROWN 555 EAST SIMPSON ST STAMFORD, CT 06905	SIZE 4, ONLY WEARS NATURAL FIBERS
C-087354-362 (460)	PHONE NUMBER (617)555-2199	ONLY BUYS ITEMS THAT ARE ON SALE
C-427724-234 (462)	E-MAIL ADDRESS (JGELMAN@MRX.COM) PHONE NUMBER (212)555-8289	PREFERS LIFETIME GUARANTEES
C-257672-875 (464)	BEEPER NUMBER (412)555-7087 POSTAL ADDRESS TIM GROSS 799 BERKSHIRE DR PITTSBURGH, PA 15215	ONLY WEARS BLACK

FIG. 9

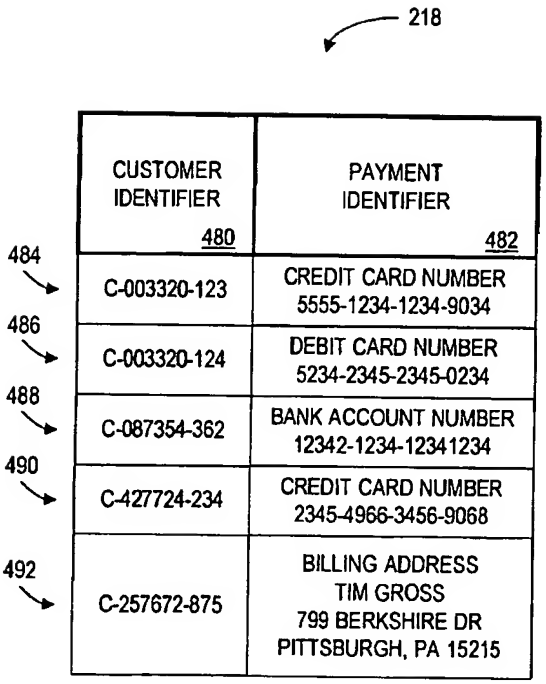

218
CUSTOMER IDENTIFIER 480
PAYMENT IDENTIFIER 482
484
C-003320-123
CREDIT CARD NUMBER 5555-1234-1234-9034
486
C-003320-124
DEBIT CARD NUMBER 5234-2345-2345-0234
488
C-087354-362
BANK ACCOUNT NUMBER 12342-1234-12341234
490
C-427724-234
CREDIT CARD NUMBER 2345-4966-3456-9068
492
C-257672-875
BILLING ADDRESS TIM GROSS 799 BERKSHIRE DR PITTSBURGH, PA 15215

FIG. 10

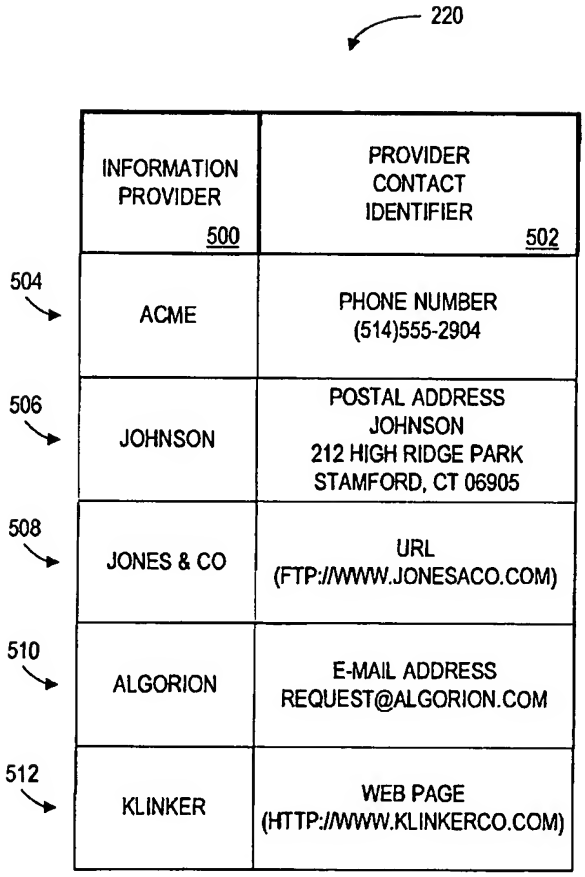

220
INFORMATION PROVIDER 500
PROVIDER CONTACT IDENTIFIER 502
504
ACME
PHONE NUMBER (514)555-2904
506
JOHNSON
POSTAL ADDRESS JOHNSON 212 HIGH RIDGE PARK STAMFORD, CT 06905
508
JONES & CO
URL (FTP://WWW.JONESACO.COM)
510
ALGORION
E-MAIL ADDRESS REQUEST@ALGORION.COM
512
KLINKER
WEB PAGE (HTTP://WWW.KLINKERCO.COM)

FIG. 11

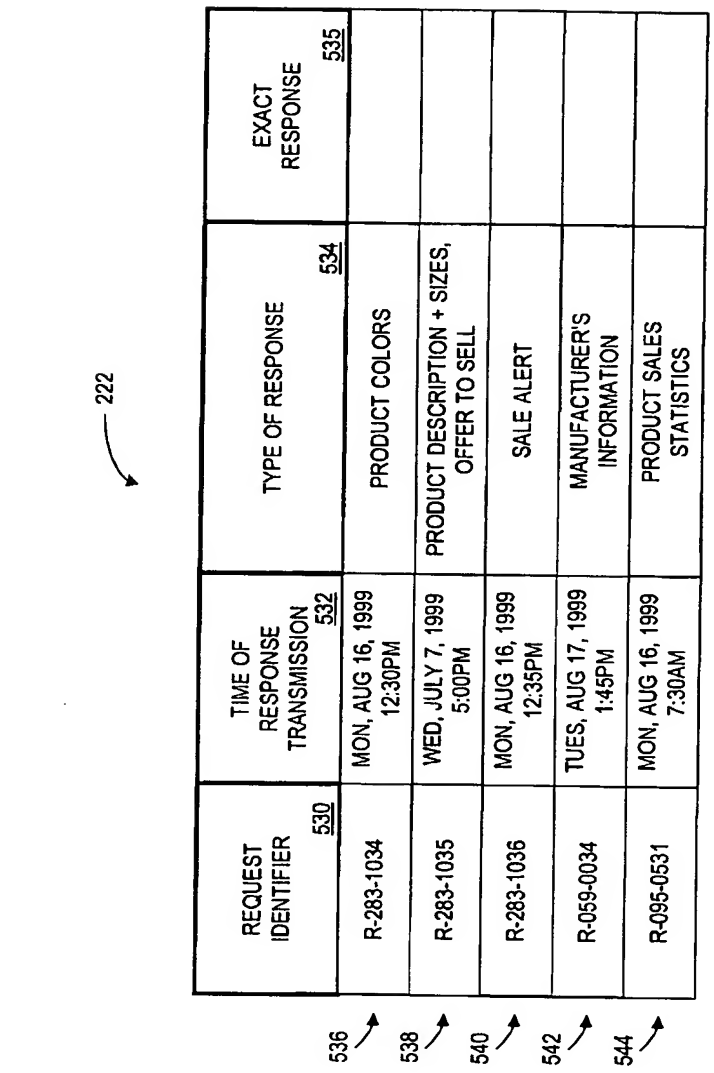

222
REQUEST IDENTIFIER 530
TIME OF RESPONSE TRANSMISSION 532
TYPE OF RESPONSE 534
EXACT RESPONSE 535
536
R-283-1034
MON, AUG 16, 1999 12:30PM
PRODUCT COLORS
538
R-283-1035
WED, JULY 7, 1999 5:00PM
PRODUCT DESCRIPTION + SIZES, OFFER TO SELL
540
R-283-1036
MON, AUG 16, 1999 12:35PM
SALE ALERT
542
R-059-0034
TUES, AUG 17, 1999 1:45PM
MANUFACTURER'S INFORMATION
544
R-095-0531
MON, AUG 16, 1999 7:30AM
PRODUCT SALES STATISTICS

FIG. 12

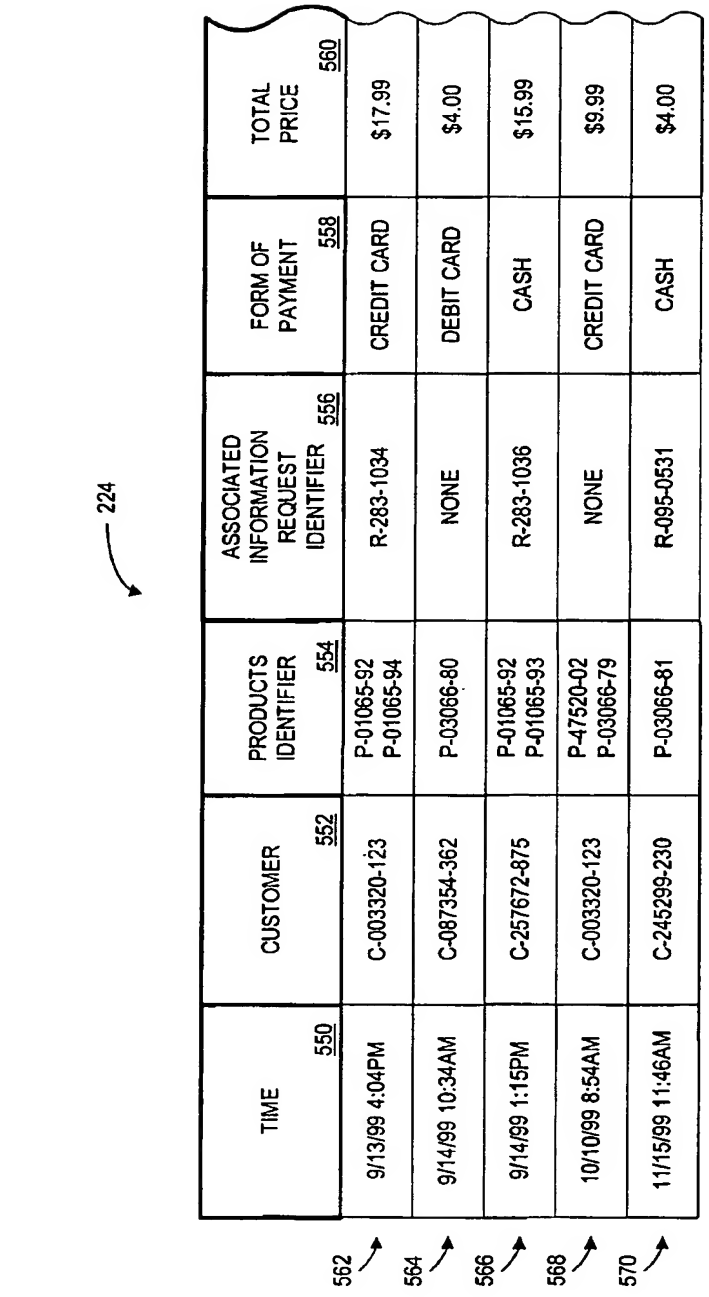

224
TIME 550
CUSTOMER 552
PRODUCTS IDENTIFIER 554
ASSOCIATED INFORMATION REQUEST IDENTIFIER 556
FORM OF PAYMENT 558
TOTAL PRICE 560
562
9/13/99 4:04PM
C-003320-123
P-01065-92 P-01065-94
R-283-1034
CREDIT CARD
$17.99
564
9/14/99 10:34AM
C-087354-362
P-03066-80
NONE
DEBIT CARD
$4.00
566
9/14/99 1:15PM
C-257672-875
P-01065-92 P-01065-93
R-283-1036
CASH
$15.99
568
10/10/99 8:54AM
C-003320-123
P-47520-02 P-03066-79
NONE
CREDIT CARD
$9.99
570
11/15/99 11:46AM
C-245299-230
P-03066-81
R-095-0531
CASH
$4.00

FIG. 13

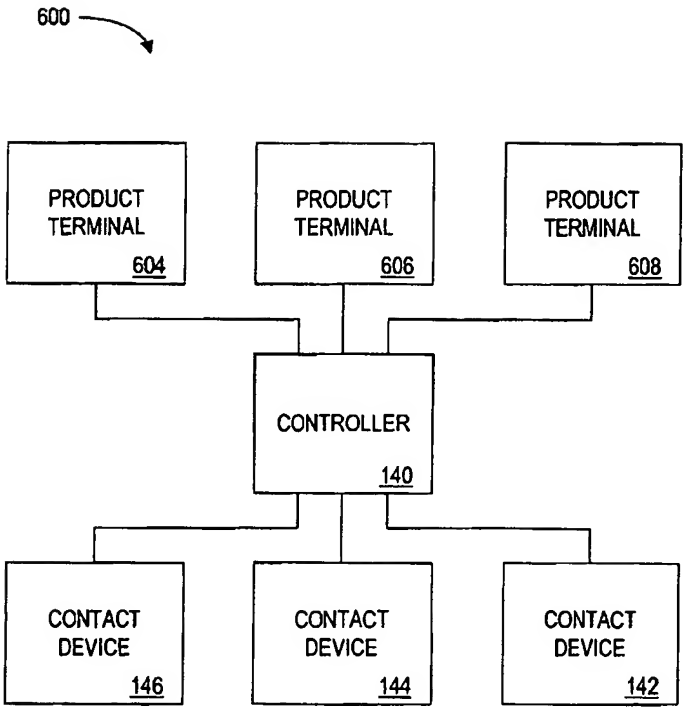

600
PRODUCT TERMINAL 604
PRODUCT TERMINAL 606
PRODUCT TERMINAL 608
CONTROLLER 140
CONTACT DEVICE 146
CONTACT DEVICE 144
CONTACT DEVICE 142

FIG. 14

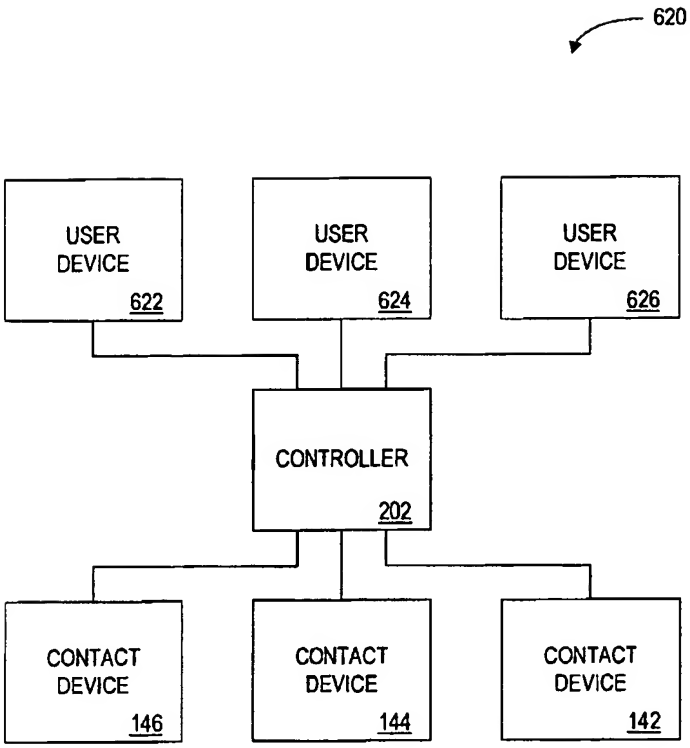

620
USER DEVICE 622
USER DEVICE 624
USER DEVICE 626
CONTROLLER 202
CONTACT DEVICE 146
CONTACT DEVICE 144
CONTACT DEVICE 142

FIG. 15

212

PRODUCT TERMINAL IDENTIFIER 400	PRODUCT IDENTIFIER 402
PT-89-453	P-01065-92

404

210

PRODUCT IDENTIFIER 350	PRODUCT NAME 352	COLOR 354	AMOUNT IN INVENTORY 368
P-01065-92	SWEATSHIRT	RED	03
P-01065-93	SWEATSHIRT	BLUE	07

370

372

214

REQUEST IDENTIFIER 420	INFORMATION REQUESTED 422	PRODUCT IDENTIFIER 424	CONTACT IDENTIFIER 426	STATUS 670
R-283-1034	OTHER COLORS OF THIS PRODUCT	P-01065-92	E-MAIL ADDRESS	PENDING

430

214

REQUEST IDENTIFIER 420	INFORMATION REQUESTED 422	PRODUCT IDENTIFIER 424	CONTACT IDENTIFIER 426	STATUS 672
R-283-1034	OTHER COLORS OF THIS PRODUCT	P-01065-92	E-MAIL ADDRESS	FINISHED

430

FIG. 16

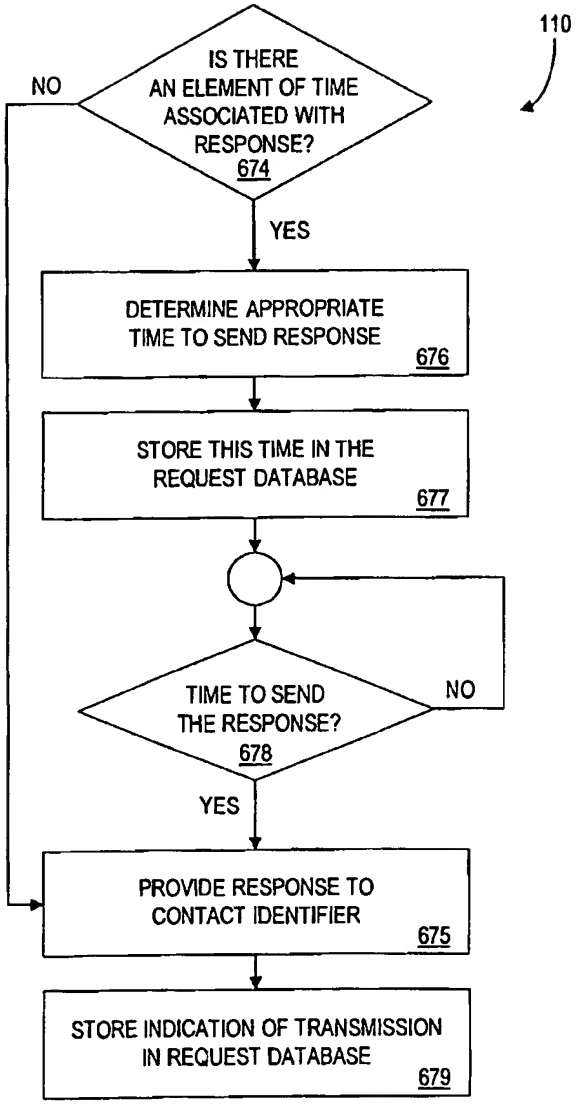

110
IS THERE AN ELEMENT OF TIME ASSOCIATED WITH RESPONSE? 674
NO
YES
DETERMINE APPROPRIATE TIME TO SEND RESPONSE 676
STORE THIS TIME IN THE REQUEST DATABASE 677
TIME TO SEND THE RESPONSE? 678
NO
YES
PROVIDE RESPONSE TO CONTACT IDENTIFIER 675
STORE INDICATION OF TRANSMISSION IN REQUEST DATABASE 679

FIG. 17

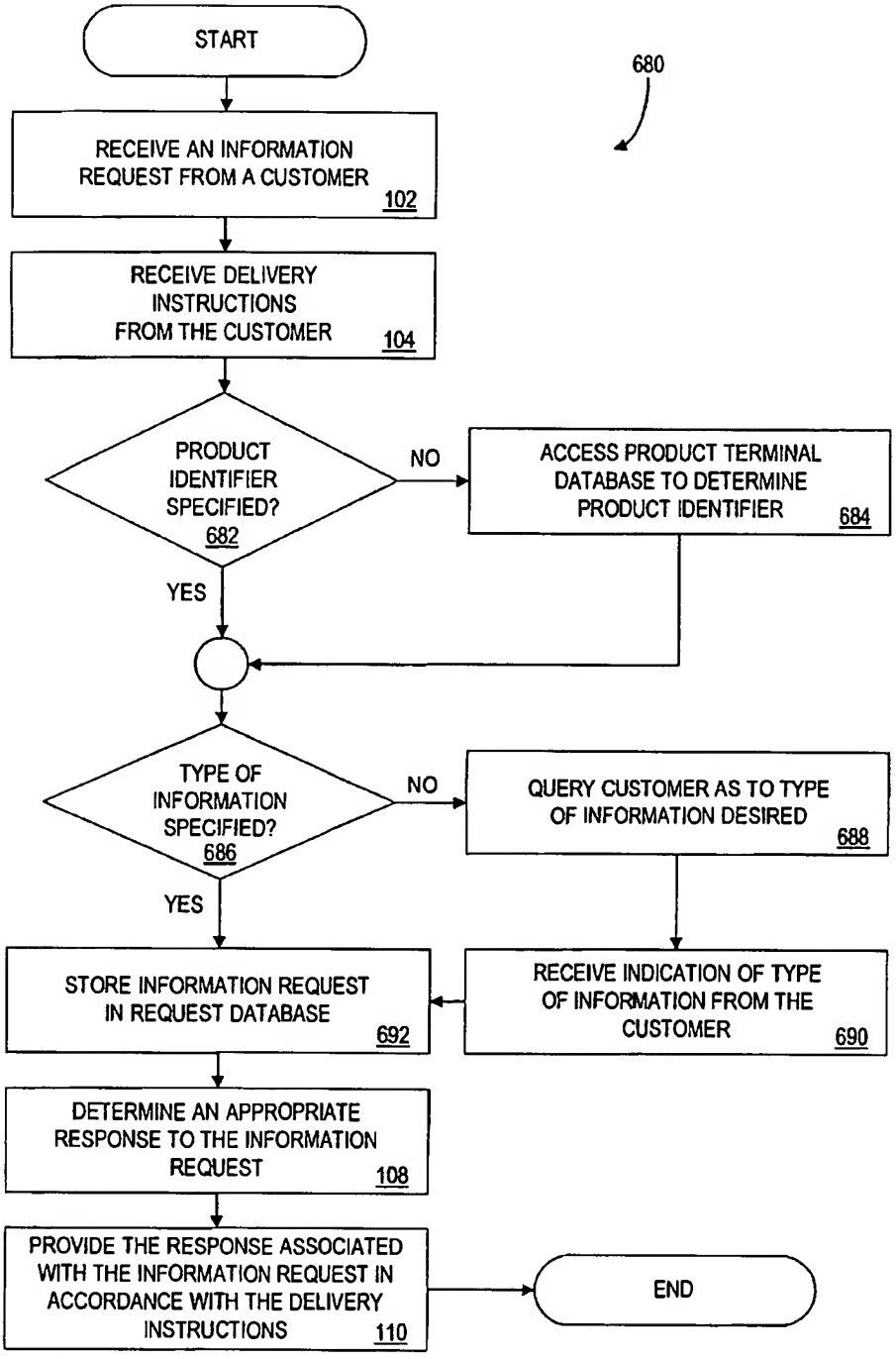

START
680
RECEIVE AN INFORMATION REQUEST FROM A CUSTOMER 102
RECEIVE DELIVERY INSTRUCTIONS FROM THE CUSTOMER 104
PRODUCT IDENTIFIER SPECIFIED? 682
NO
ACCESS PRODUCT TERMINAL DATABASE TO DETERMINE PRODUCT IDENTIFIER 684
YES
TYPE OF INFORMATION SPECIFIED? 686
NO
QUERY CUSTOMER AS TO TYPE OF INFORMATION DESIRED 688
YES
STORE INFORMATION REQUEST IN REQUEST DATABASE 692
RECEIVE INDICATION OF TYPE OF INFORMATION FROM THE CUSTOMER 690
DETERMINE AN APPROPRIATE RESPONSE TO THE INFORMATION REQUEST 108
PROVIDE THE RESPONSE ASSOCIATED WITH THE INFORMATION REQUEST IN ACCORDANCE WITH THE DELIVERY INSTRUCTIONS 110
END

FIG. 18

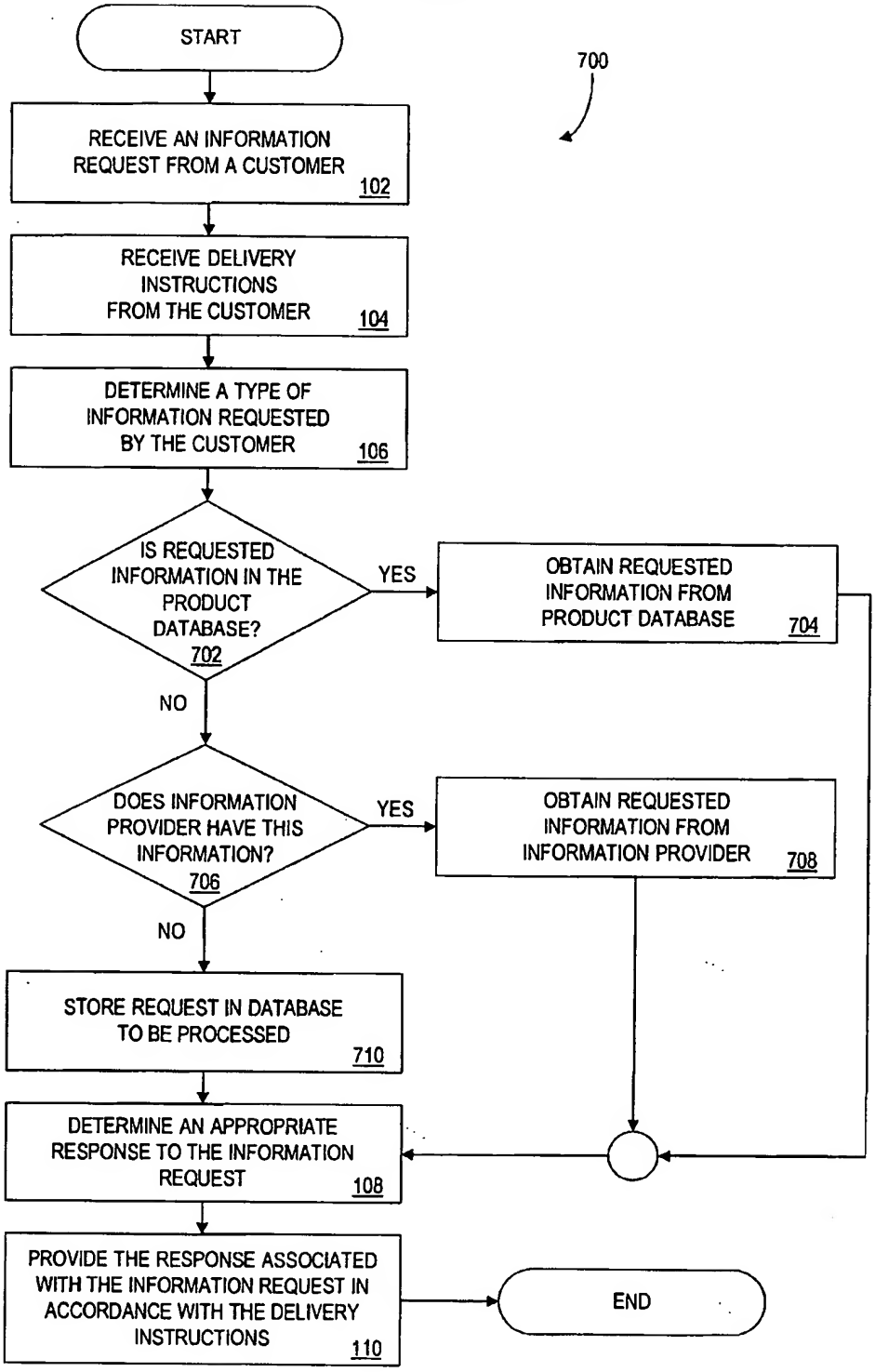

START
700
RECEIVE AN INFORMATION REQUEST FROM A CUSTOMER 102
RECEIVE DELIVERY INSTRUCTIONS FROM THE CUSTOMER 104
DETERMINE A TYPE OF INFORMATION REQUESTED BY THE CUSTOMER 106
IS REQUESTED INFORMATION IN THE PRODUCT DATABASE? 702
YES
OBTAIN REQUESTED INFORMATION FROM PRODUCT DATABASE 704
NO
DOES INFORMATION PROVIDER HAVE THIS INFORMATION? 706
YES
OBTAIN REQUESTED INFORMATION FROM INFORMATION PROVIDER 708
NO
STORE REQUEST IN DATABASE TO BE PROCESSED 710
DETERMINE AN APPROPRIATE RESPONSE TO THE INFORMATION REQUEST 108
PROVIDE THE RESPONSE ASSOCIATED WITH THE INFORMATION REQUEST IN ACCORDANCE WITH THE DELIVERY INSTRUCTIONS 110
END

FIG. 19

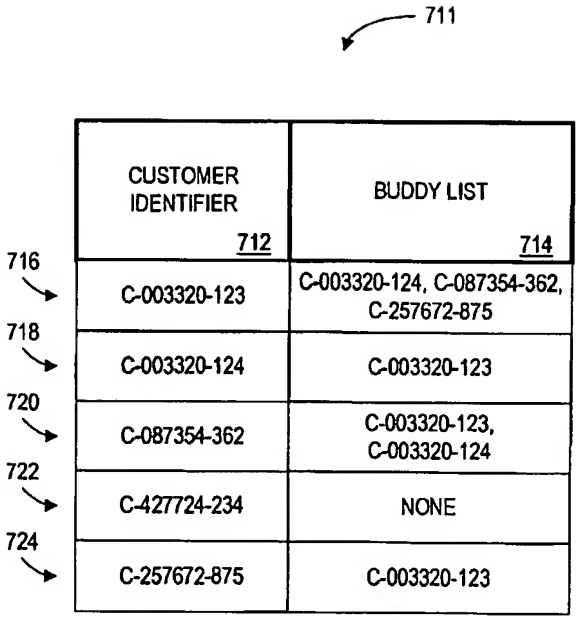

711
CUSTOMER IDENTIFIER
712
BUDDY LIST
714
716
C-003320-123
C-003320-124, C-087354-362, C-257672-875
718
C-003320-124
C-003320-123
720
C-087354-362
C-003320-123, C-003320-124
722
C-427724-234
NONE
724
C-257672-875
C-003320-123

FIG. 20

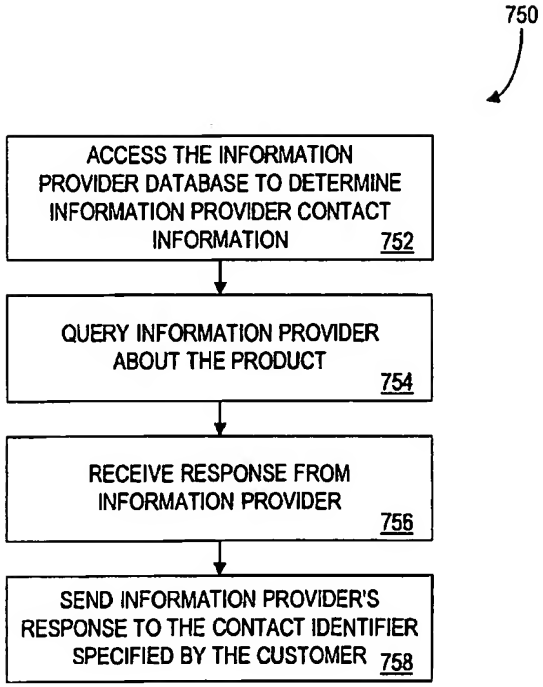

750
ACCESS THE INFORMATION PROVIDER DATABASE TO DETERMINE INFORMATION PROVIDER CONTACT INFORMATION 752
QUERY INFORMATION PROVIDER ABOUT THE PRODUCT 754
RECEIVE RESPONSE FROM INFORMATION PROVIDER 756
SEND INFORMATION PROVIDER'S RESPONSE TO THE CONTACT IDENTIFIER SPECIFIED BY THE CUSTOMER 758

FIG. 21